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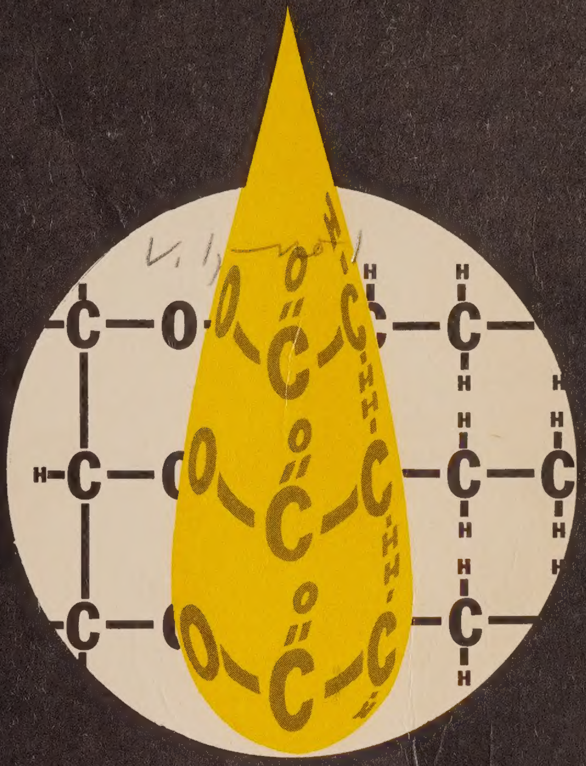
ATS AND OILS IN CANADA / SEMI ANNUAL REVIEW



RTMENT OF INDUSTRY, FOOD PRODUCTS BRANCH

JANUARY 1966

DEPARTMENT OF INDUSTRY

FATS & OILS IN CANADA

Semi-Annual Review

January 1966

Prepared by: Edible Oils Section
Food Products Branch
Department of Industry
Ottawa, Canada.

Vol. 1, No. 1.

INTRODUCTION

This is the first issue of "Fats & Oils in Canada", a semi-annual review, prepared by the Food Products Branch. It contains in one publication statistical information of relevance to the fats and oils industry in Canada, as well as an analysis of these data.

In addition "Fats & Oils in Canada" will report on significant technical and economic development in Canada and abroad wherever they are likely to affect our industry.

The Canadian statistical data are based on material provided by the Dominion Bureau of Statistics, Department of Agriculture, Department of Fisheries and the Department of Trade & Commerce. Additional statistics are obtained from a variety of sources.

"Fats & Oils in Canada" is meant to be a working document for people interested in the development of the Canada fats and oils industry. Suggestions and comments on this publication will be welcomed.

Food Products Branch,
Department of Industry.
OTTAWA, December 1965.

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Introduction

WORLD FATS & OILS 1961–1965

World fats and oils production has been increasing, although not always at a constant rate, during the past five years.

Major changes in world supplies in 1965–66 by comparison with the previous year's production can be expected in the following:

soybean oil	:	a 750,000 tons increase resulting mainly from a larger U.S. crop.
rapeseed oil	:	a 200,000 tons increase resulting from larger Canadian and French crops.
olive oil	:	a 300,000 tons increase in the Mediterranean area.
sunflower seed oil	:	a 5% – 10% decrease.
peanut oil	:	less than 5% decrease
whale oil	:	decrease of 50,000 tons.

The "Oil World", published by Mielke & Co., Hamburg, Germany, predicts an overall increase in total world production in 1965–66 of about 900,000 tons of primarily edible oils.

As shown in Tables I and II world production of all fats and oils increased in 1964 to 39.2 million tons from 37.9 million tons in 1963, although production failed to rise during the previous year. Nearly the entire increase in 1964 was due to a one million ton rise in olive oil output. It should be noted that in line with the cyclical nature of the olive crop, the production dropped by a similar volume the following season, and an increase of only 300,000 tons is indicated for the present season.

As shown in Table II inedible tallow production declined by more than 250,000 tons. Peanut oil exports declined, and marine oil exports fell off as a result of reduced Antarctic whaling operations.

Mr. de Boinville, president of the International Association of Seed Crushers, in reviewing the world fats and oils situation at the annual congress in Lausanne, Switzerland, has concluded that, since world consumption increases annually by about 550,000 tons, there must have been a sizable reduction in stock since 1962.

He has noted that world demand for fats and oils has tended to exceed supplies, and that prices rose by 30% during the nine months ending in March 1965. Since then prices have generally levelled off.

Looking at the future, the U.S. Secretary of Agriculture, Orville Freeman, predicted that the world will be 3.3 million tons short of vegetable fats by 1970 even if we merely maintain present standards of nutrition.

Mr. Freeman has called for a doubling of American exports of cereals and an increase in vegetable fats shipments under Public Law 480 from 550,000 tons to 3.3 million tons by 1970. Mr. Freeman and the International Association of Seed Crushers have underlined the need to expand the fats and oils supply.

TABLE I

World Fats & Oils Summary – 1961 to 1964

1. World Summary

(In terms of oil or fat)

	Short Tons (000)s			
	1961	1962	1963	1964 Partly Estimated
World Supply				
Production	36,426	37,892	37,942	39,248
Population (millions)	3,069	3,135	3,218	3,303
Per Capita – lb.	23.7	24.2	23.6	23.8
World Exports(1)(2)	9,178	9,720	10,174	10,864
of which: U.S.A.	2,543	2,884	3,255	4,097
Other America	970	1,123	1,012	960
Africa	2,016	1,980	2,002	2,044
Asia	1,650	1,682	1,816	1,824
Oceania	579	631	642	628
Europe – West	674	661	660	638
East/USSR	198	236	335	249
Whale/Sperm Oil	548	524	453	423
World Imports(1)(2)	9,102	9,417	10,046	10,525
of which: Europe – West	5,309	5,279	5,680	5,659
East/USSR	704	626	678	823
U.S.A.	524	558	520	535
Other America	707	739	711	842
Africa	412	527	487	497
Asia-Middle East	211	328	377	414
Far East	1,162	1,278	1,509	1,671
Oceania	74	83	84	83

Notes:

(1) Excludes U.S. donations and their import by recipient countries.

(2) Difference between recorded world exports and recorded world imports is due to shipping lags, normal wastage and changes in Rotterdam transit stocks.

Source: International Seed Crushers Association.

TABLE II

2. World Production – Types of Oils and Fats

Short Tons (000)s
(In Terms of Oil or Fat)

	1961	1962	1963	1964
'Edible' Type Oils:				
Cottonseed	2,414	2,530	2,623	2,695
Groundnut	2,838	3,020	3,103	3,224
Soya Bean	4,266	4,685	4,845	4,988
Sunflower	2,006	2,254	2,194	2,116
Olive	1,543	1,587	1,086	2,023
Sesame	540	584	601	601
Rapeseed	1,356	1,422	1,367	1,235
Maize/Teaseed	204	226	231	248
Safflower	105	143	182	154
Total	15,273	16,452	16,232	17,284
'Palm' Oils:				
Coconut	2,348	2,331	2,409	2,453
Palm Kernel	524	485	496	513
Palm Oil	1,196	1,157	1,213	1,207
Babassu Kernel	72	88	88	88
Total	4,139	4,062	4,205	4,260
Industrial Type Oils:				
Linseed	1,080	1,108	1,135	1,168
Castor Bean	254	259	287	287
Tung	116	121	116	116
All Other Vegetable Oils(1)	331	358	364	369
Total	1,780	1,846	1,901	1,940
Animal Fats:				
Butter (Fat Content)(2)	5,098	5,181	5,104	5,126
Lard	4,839	4,922	4,966	4,784
Tallow	4,073	4,178	4,431	4,685
Total	14,010	14,280	14,501	14,595
Marine Oils:				
Whale (including Sperm Oil)	551	524	452	424
Fish	672	728	650	744
Total	1,224	1,251	1,102	1,168
Estimated World Total	36,426	37,892	37,942	39,248

Notes:

(1) Includes oiticia, mowrah, niger, hempseed, perilla seed and other minor oils.

(2) Includes ghee.

Source: International Seed Crushers Association.

TABLE III

CANADIAN OILSEEDS: SUPPLY AND DISPOSITION

OILSEEDS: ACREAGE, YIELDS, PRODUCTION

Crop	Area			Yield per Acre		
	1963	1964	1965	1963	1964	1965
		(000 Acres)			(Bushels)	
Flaxseed.......	1,685	1,978	2,239	12.6	10.3	12.5
Rapeseed	483	791	1,435	18.3	16.7	15.9
Soybeans.......	228	231	265	21.9	30.2	30.3
					(Pounds)	
Sunflower Seed	38	79	67	948	394	450
Mustard Seed ...	155	74	185	893	645	811

	Production			Oil Equivalent		
	1963	1964	1965	1963	1964	1965
		(000 Bushels)			(Million Pounds)	
Flaxseed	21,176	20,313	27,954	419	402	553
Rapeseed	8,360	13,230	22,800	177	265	456
Soybeans.......	5,002	6,976	8,030	53	74	85
		(000 Pounds)				
Sunflower ...... Seed	36,038	30,900	30,155	12	10	10
Mustard Seed ...	138,440	47,750	150,000	26	9	29

Based on D.B.S. data.

Extraction Rates: Flaxseed 35.4%
Soybeans 17.7%
Rapeseed 40.0%
Sunflower Seed 33 %
Mustard Seed 19.0%

FARM VALUE OF CANADIAN CROPS

Flaxseed – About $60 million in 1963 and 1964. This year's crop will be worth close to $80 million.

Rapeseed – The farm value of this crop has increased from $22.3 million in 1963 to $36.2 million in 1964 and will be around $45 million for the 1965 crop.

Soybeans – The farm value of the soybean crop rose from $14 million in 1963 to $20 million in 1964, and will probably reach $23 million for the 1965 crop.

Sunflower Seed – Average prices are calculated from different prices obtained for bird seed, confectionery or crushing varieties. In 1963 the crop was estimated at $1.6 million, in 1964 at $1.45 million and possibly $1.5 million in 1965.

Mustard Seed – The price for this seed has been just above 4¢ per pound during the past two years, and the value of the 1965 crop may reach about $6 million.

Total oilseed acreage has advanced by more than one million acres from 3,150,000 in 1964 to 4,190,000 in 1965. Apart from the soybeans and a small amount of flaxseed, all oilseeds are grown on the Prairie Provinces.

TABLE IV

FLAXSEED: SUPPLIES, DISTRIBUTION AND PRICES, CANADA, 1953–65

(Crop Year August 1 – July 31)

	Average 1953–57	Average 1958–62	1963–64	1964–65	1965–66
			(Thousand Bushels)		
Stocks at Aug. 1	4,191	5,969	3,988	6,551	7,112
Production	18,786	18,525	21,176	20,313	27,954
Imports	217	45	65	7	
Total Supply	23,194	24,539	25,224	26,871	35,066
Exports	11,666	12,985	13,638	14,346	
Stocks at July 31	4,461	5,637	6,551	7,112	
Domestic Disappearance	7,067	5,917	5,040	5,413	
Domestic Crushings	–	–	2,750	2,901	
			– Dollars per Bushel –		
Average Farm Price (all grades)	2.51	2.96	2.91	2.87	

Based on D.B.S. data

Domestic crushings have increased moderately from 2.5 million bushels during the crop year 1961–62 to 2.9 million bushels in 1964–65; which remains about 20% of the export volume. This year's crop is close to 40% above the 1964 crop, and no significant increase in crushing volume is expected. Increased export markets will have to absorb the increased supply.

The U.S. crop of flaxseed has increased this year to a record of 33.5 million bushels. U.S. processors crushed 22 million bushels in 1964-65 and will probably increase production and exports in 1965-66. Argentine's supply is expected to grow by 6% in 1965 to 32.1 million bushels.

TABLE V

CANADA: DISPOSITION OF FLAXSEED OIL AND MEAL

	1961–62	1962–63	1963–64	1964–65
		(000 Pounds)		
Flaxseed Oil				
Domestic Production	47,918	49,105	53,173	55,742
Exports	8,943	8,283	11,754	26,445
Domestic Disappearance	38,975	40,822	51,419	29,297
Flaxseed Meal				
		(000 Tons)		
Domestic Production	42.9	43.1	47.8	50.9
Exports	12.6	13.4	11.4	23.4
Domestic Disappearance	30.3	29.7	36.4	27.5

Source: DBS

More than 95% of all linseed oil exports go to the U.K., and about 80% of the flaxseed meal is exported to Britain. Imports of these commodities are very small.

TABLE VI

FLAXSEED PRICES(1)

Cents and Eights per Bushel

	1961–62	1962–63	1963–64	1964–65
August	374/3	368	319/3	331/1
September	374/7	359/6	321/1	324/4
October	363/5	338	318/3	318/4
November	343/7	324/1	316	315/2
December	361/4	320/7	316/1	314/1
January	359/5	324/3	322/4	315
February	356/6	327/4	322/4	323/1
March	370/3	331/4	323/2	324/7
April	388/7	331/3	316/2	321/6
May	393	334/1	314	324/5
June	365/6	329	318/2	319/2
July	365/7	331	328	312/3
Yearly Average	368/2	335	319/6	320/3

Source: D.B.S.

(1) Winnipeg Grain Exchange No. 1 C.W. Flaxseed, basis Fort William-Port Arthur.

TABLE VII

EXPORTS OF CANADIAN FLAXSEED 1964–65 and 1963–64

Destination	May 1965	June 1965	July 1965	August – July 1964–65	August – July 1963–64
			(000 Bushels)		
Western Europe					
EEC					
Belgium and Luxembourg	140	26	–	462	334
France	17	40	–	346	681
Germany, Federal Republic	274	212	148	903	864
Italy	–	–	–	38	–
Netherlands	395	264	–	2,039	1,476
Sub-totals	826	542	148	3,790	3,355
Other Western Europe					
Britain	284	398	318	4,776	4,545
Finland	–	–	–	–	177
Greece	–	–	–	–	93
Ireland	–	–	–	24	–
Norway	135	–	–	259	248
Portugal	–	–	83	190	215
Spain	40	–	–	454	490
Sub-totals	461	398	401	5,703	5,768
TOTALS	1,287	940	548	9,493	9,123
Eastern Europe					
Czechoslovakia	–	–	–	241	57
Germany, East	–	–	–	–	24
Yugoslavia	–	–	410	410	480
Totals	–	–	410	651	561
Asia					
Israel	40	20	–	128	124
Japan	248	310	177	4,051	3,830
Korea	24	–	–	24	–
Totals	312	330	177	4,203	3,954
TOTALS, All Countries	1,598	1,270	1,135	14,346	13,368

Source: DBS No. 22–001

Britain, Japan and the Netherlands purchase about 75% of all Canadian Flaxseed exports.

TABLE VIII

Canadian Rapeseed: Production and Disposition

(Crop year August 1 to July 31)

	Average 1953/57	Average 1958/62	Average 1962/63	1963/64	1964/65	1965/66
			(000 acres)			
Canada	235	537	371	478	791	1,435
Manitoba	15	26	32	45	84	145
Saskatchewan	199	358	167	210	303	555
Alberta	21	153	172	223	404	735
			(000 bushels)			
Production (Canada)	3,457	7,904	5,870	8,360	13,230	22,800
Stocks Aug. 1	–	–	NA	600(1)	881(1)	1,167(1)
Total Supply	–	–	–	8,960	14,111	23,967
Exports	–	–	5,800	5,308	9,276	
Domestic Disappearance	–	–	–	2,711	3,668	
			(dollars per bushel)			
Average Farm Price	1.71	1.75	2.05	2.52	2.74	

Source: D.B.S.
(1) Estimate

The 1965 rapeseed acreage is 81% above the 791,000 acres seeded in 1964, and the yield of 22.8 million bushels 72% higher. Adverse weather conditions during the late summer reduced the expected record yield without, however, affecting the quality of the seed to any significant extent. Very little frozen or immature seed has been reported so far.

Mr. M.M. Ainslie, Chief Grain Inspector, Board of Grain Commissioners, reports:

"From August 1 to October 29, 1965 inclusive, a total of 2118 samples were submitted for grade and dockage. Of this total 74% graded as No. 1 Canada Rapeseed, 11.2% graded as No. 2 Canada Rapeseed, 5% graded No. 3 Canada Rapeseed, and the balance of 9.8% graded into Off Grades Rejected and Sample Grade".

The percentages indicated by samples submitted through country elevator agents and producers are not necessarily a true indication of the distribution of grades, because the Board normally sees more of those samples where there is a grading problem.

Prices at the farm level have ranged this season from about $1.75 to $2.30 per bushel. Since the short supply of soybean oil and a strong world market for vegetable oils have kept oil prices at a fairly high level, crushing margins have been exceptionally favourable up to now this season.

The Grain Research Laboratory, Winnipeg, reported at the end of October preliminary results on the oil and protein content of the 1965 crop, as shown in Table IX.

TABLE IX

Rapeseed Standard Samples – 1965 Crop

Province	Grade	Number of Samples	Oil Content %	Protein Content %
Prairie	No. 1 Canadian Rapeseed	201	43.4	40.0
Provinces......	No. 2 Canadian Rapeseed	38	42.2	41.5
	No. 3 Canadian Rapeseed	1	40.7	42.2
	All Grades..................	240	43.2	40.2
Manitoba.......	All Grades..................	20	44.6	39.6
Saskatchewan ..	All Grades..................	117	42.5	41.3
Alberta........	All Grades..................	103	43.8	39.2

Note: Both oil content and protein content of the oil-free meal are reported on a moisture-free basis.

Canadian and World rapeseed situation: World rapeseed production in 1965 is estimated to have increased over 1964 by close to 500,000 tons to approximately 5.1 million tons. Apart from Canada, Poland, France and China will have increased supplies. The major exporting nations: Canada, France, Sweden and Denmark are expected to offer at least 800,000 tons of rapeseed for export, i.e. about 250,000 tons more than in 1964. These estimates are probably the minimum of what will be offered.

Canada is estimated to have approximately 19 million bushels, i.e. 475,000 tons of rapeseed available for export. This compares with exports of 9.3 million bushels during 1964/65. New markets will have to be found.

In 1964/65 Canada's domestic rapeseed crushings are estimated at slightly above 2 million bushels, yielding about 30,000 tons of rapeseed meal and between 40 and 43 million pounds of oil. (See comments for sunflower seed crushings.) If present favourable crushing margins persist, total domestic crushing may reach approximately 3.5 million bushels in 1965. The oil, about 70 million pounds, and the meal, about 52,000 tons, will have to be absorbed primarily by the domestic market.

Demand for the oil –– at a price slightly below soybean oil –– is very strong at present. The use of the meal in various feed rations is still subjected to some restrictions, although its nutritional properties have been improved through modifications of the processing of rapeseed. Western Canada and Quebec are the main markets for rapeseed meal, and should be able to absorb most of the increased supply. It is usually priced well below soybean meal, its chief competitor. One October quotation in Vancouver showed a $30 per ton differential compared with imported U.S. soybean meal.

In addition there has been considerable interest shown by various countries in Canadian rapeseed oil and meal, but export possibilities have not yet been fully exploited. Most of the crop will be exported as seed. Total export sales so far this season are reported in excess of 8 million bushels.

Rapeseed exports in 1963 amounted to $16 million, in 1964 to $10 million and during the first 7 months of 1965 to $24.4 million. Japan has been Canada's major customer. Italy, Spain and Algeria, all olive oil consumers, have bought sizeable quantities at times. This year's olive harvest still remains below normal, so that export opportunities exist in these areas. Export supplies of peanut oil are also expected to decline despite an increase in production, and rapeseed oil could take its place.

TABLE X

Canadian Rapeseed Exports

(calender years) (mill. pounds)

	1963	1964	Jan. to July 1964	Jan. to July 1965
United Kingdom	3.64	4.59	4.59	17.84
Belgium-Luxemburg	–	–	–	3.39
Finland	–	4.49	4.49	–
West Germany	0.48	0.46	0.16	31.62
Italy	38.45	6.53	6.53	73.09
Netherlands	5.54	18.68	6.74	39.84
Spain	–	2.01	0.08	0.14
Czechoslovakia	–	–	–	30.37
Poland	–	–	–	19.85
Algeria	27.78	–	–	–
India	–	5.60	–	–
Pakistan	–	–	–	44.92
Japan	229.48	124.98	90.91	144.31
Taiwan	4.41	8.47	6.04	–
United States	0.76	6.27	6.19	0.04
Total	310.54	182.08	125.73	405.41
Total: (Million Bushels:)	6.2	3.6	2.5	8.1

Source: D.B.S.

TABLE XI

Canadian Soybeans and Soybean Products: Supply & Disposition

(August 1 – July 31)

	1961–62	1962–63	1963–64	1964–65
		(000 Bushels)		
Soybeans				
Production	6.631	6.608	5.002	6.976
Imports	13.329	14.711	15.656	15.827
Supply	19.960	21.319	20.658	22.803
Domestic Crushings	16.916	17.862	18.606	19.541
Exports	3.671	2.445	1.614	3.179
		(000 Pounds)		
Soybean Oil				
Domestic Production	176.821	183.592	192.655	201.057
Imports	17.062	27.182	34.261	33.660
Supply	193.883	210.774	226.916	234.717
Exports	49.039	51.076	28.163	33.164
Apparent Disappearance	144.744	159.698	202.753	201.553
		(000 Tons)		
Soybean Meal				
Domestic Production	396	419	442	465
Imports	247	282	203	261
Supply	643	701	645	726
Exports	192	233	211	267
Apparent Disappearance	451	468	434	459

Based on D.B.S. data.

TABLE XII

Canadian Soybean Prices

(Cents and Eighths per Bushel)

	1961–62	1962–63	1963–64	1964–65
August	228/5	242/5	275	276
September	222	248/2	281/6	298/2
October	230/7	252/1	297/1	303/6
November	232/6	255/1	295/3	312/7
December	239/5	256/4	292/1	318/3
January	241/4	269/1	288	324/1
February	248/1	276/1	276/4	328/6
March	252/2	275/1	275/3	322/1
April	260/4	273	272	320/1
May	272/1	276/6	267/3	302/5
June	274/7	283/3	265/6	312/2
July	255/5	281/7	266/7	304/3
Yearly Average	246/5	265/7	279/3	310/4

Buying prices, carlots, f.o.b. Chatham, Ontario.
Source: D.B.S.

TABLE XIII

EXPORTS OF CANADIAN SOYBEANS
1964–65 and 1963–64

Destination	April 1965	May 1965	June 1965	July 1965	August–July 1964–65	August–July 1963–64
			(000 Bushels)			
Britain	75	368	390	214	2,952	1,525
Denmark	–	123	–	–	123	–
Germany, Federal Republic	–	–	37	–	95	86
Sweden	1	–	–	–	1	–
Switzerland	–	–	–	–	1	1
Sub-totals	76	491	390	214	3,077	1,526
TOTALS	76	491	427	214	3,172	1,612
Republic of South Africa	–	2	2	–	7	–
Australia	–	–	–	–	–	2
TOTALS, ALL COUNTRIES	76	493	429	214	3,179	1,614

Source: D.B.S.

Summary of Soybean Situation:

Soybean production in 1965 has risen to above 8 million bushels from the record of nearly 7 million bushels in 1964. Imports of soybeans –– all from the United States –– increased only slightly during 1964–65. Consequently the more than 2 million bushels increase in crushings came largely from domestic beans. Exports of beans doubled compared with 1963/64. The value of the soybeans imported in 1964 amounted to $52.9 million, oil imports to $3.8 million and soybean meal to $17.4 million. Exports of soybeans in 1964 amounted to $5.8, of oil to $3.0 million, and of soybean meal to $21.1 million.

Domestic production of soybean oil is to approximately 75% derived from imported beans. The total supply of soybean oil has increased by about 20% during the past five years to 235 million pounds of crude oil. The available supply was in 1964/65 about 200 million pounds. It is not known how much was used in the protective coating industry or for other inedible purposes. However, 132 million pounds of refined oil were consumed in the manufacture of margarine and shortening. An undetermined amount formed part of the production of 70 million pounds of salad and cooking oils.

Soybean meal imports and exports have been kept fairly well in balance –– as far as volume is concerned –– for the past two years. Both have shown a considerable increase. Total domestic disappearance has remained at a level close to 450,000 tons for the past five years.

Soybean prices, f.o.b. Chatham, Table X11 have increased further in 1964/65 to an average of 310/4 as compared with 279/3 in 1963/64. The larger world production of soybeans, estimated at 1.2 billion bushels up nearly 17% from 1964 should keep prices from reaching the high of last year.

TABLE XIV

Imports of Soybean Meal by Province

	1963		1964		1965 Jan–June	
	(mil. lbs.)	(000$)	(mil. lbs.)	(000$)	(mil. lbs.)	(000$)
Nfld.	–	–	0.19	9	0.06	2
N.S.	4.76	210	0.32	14	0.24	9
P.E.I.	–	–	0.30	15	0.18	8
N.B.	1.72	69	1.87	72	0.93	38
Que.	166.16	6,605	116.44	4,520	68.91	2,695
Ont.	237.34	9,376	225.82	8,711	110.61	4,391
Man.	55.09	2,290	59.06	2,388	29.85	1,237
Sask.	0.98	42	0.75	32	0.27	13
Alta.	8.95	379	11.00	463	5.93	254
B.C.	38.65	1,640	30.08	1,220	13.34	576
TOTAL	513.64	20,609	445.84	17,442	228.34	9,225

Source: D.B.S.

Comments on Import of Soybean Meal

All soybean meal is imported from the USA. The values given in Table XIV refer to ports of entry; the meal was not necessarily consumed in the same province. However, it is noteworthy, that Quebec accounted for 50 million lbs. of the 68 million lbs drop in imports in 1964. Feed consumption in Quebec in 1964 did not decrease, so that the lower imports must have been replaced by larger domestic shipments. In addition to soybean meal, Canada also imported 5.83 million lbs. of cottonseed meal worth $229,000 from the USA in 1964. These two commodities account for nearly all oilseed meal imports.

TABLE XV

Canada: Sunflower Seed: Acreage, Production
(August 1 – July 31)

	Average 1953–57	Average 1958–62	1963–64	1964–65	1965–66
			(Acreage)		
Canada, Total	22,100	37,820	42,000	78,500	67,000
Manitoba	22,100	31,200	37,000	48,000	48,000
Saskatchewan	–	–	3,500	23,000	17,500
Alberta	–	6,620	1,500	7,500	1,500
			(Million Pounds)		
Production (Canada)	13.4	25.0	39.8	30.9	30.2
Average Farm Price, Cents per Pound	4.3	4.5	4.5	4.7	

Source: D.B.S.

The position of Western Canadian oilseed crushers would be greatly improved by a second edible oilseed crop grown on the prairies. Sunflower seed has often been regarded as the best choice to complement rapeseed. With the introduction of the Russian Peredovik variety, which contains more oil and meal at the expense of a lowered hull content, higher yields were expected. However, for the past two seasons early frost has damaged the crop, and no more than half the expected average yield of 900 lbs. per acre was reached. The need for an earlier maturing variety seems to be the most urgent problem.

In Saskatchewan and Alberta practically all sunflower is grown on summer fallow in so-called wide rows, spaced 16 feet or more apart. The frost has affected these areas most, reducing the expected yields to 200 and 170 pounds per acre respectively, i.e., to a total of less than four million pounds. In Manitoba the yield is reported to be 550 lbs. per acre, totalling 26.4 million pounds. Approximately 75% of the Manitoba crop and all of the Saskatchewan and Alberta crop are of the Peredovik variety. Consequently the oil equivalent of the part available for crushing may not exceed seven million pounds.

Sunflower makes a desirable salad oil and finds a ready market.

TABLE XVI

Canadian Export of Sunflower Seed

(thousand pounds)

(crop year: Aug 1 – July 31)

	1962–63	1963–64	1964–65	Jan. July 1964	Jan. July 1965
	14.346	12.916	13.316	3.913	6.744
			(calendar year)		
Destination:	1962	1963	1964		
United Kingdom	–	–	6	2	2.473
Belgium-Luxemburg	–	–	105	105	55
Denmark	–	–	55	–	44
West Germany	–	1.554	2.178	1.102	1.287
Netherlands	–	1.887	3.348	624	165
Sweden	–	–	0	–	–
Republic of S. Africa	–	0	–	–	–
Trinidad	6	–	–	–	–
United States	14.051	10.847	4.793	2.080	2.721
Total	14.057	14.288	10.485	3.913	6.744

Source: Trade of Canada.

Values of total exports per calendar year amounted to

$1.2 million in 1962
$1.2 million in 1963
$790,000 " in 1964

and $411,000 for the first seven months of 1965. It is safe to assume that only birdseed and confectionary varieties were exported.

Subtracting the 1964–65 exports of 13.3 million pounds from the total production of 30.9 million pounds, leaves about 17 million pounds for crushing in Canada. This is equivalent to close to 6 million pounds of oil. Inventories are not published, and since crushing figures are not disclosed because there are fewer than three firms involved, actual oil production figures can only be estimated. An analysis of export and production figures indicates that about one to two million pounds more than the estimated 6 million pounds could have been produced in 1964–65. (Also see Canadian Oilseed Crushing statistics and comments on rapeseed crushing).

MUSTARD SEED

Mustard seed is grown but not crushed in Canada. The crop is grown on a contract basis, and the bulk is exported for condiment purposes.

TABLE XVII

Canadian Mustard Seed Production (Aug 1–July 31)

	Average 1958/62	1963/64	1964/65	1965/66
		(Acres)		
Canada, Total	104,463	155,000	74,000	185,000
Manitoba	4,363	20,000	10,000	19,000
Saskatchewan	21,080	63,000	29,000	70,000
Alberta	79,020	72,000	35,000	96,000
		(Thousand Pounds)		
Canada: Production	54,470	138,440	47,750	150,000
		(cents per pound)		
Average Farm Price	3.7	4.1	–	–

Source: D.B.S. Data.

Average yield per acre increased from 645 pounds in 1964 to 811 pounds in 1965.

Exports amounted to $2.7 million in 1963, $2.9 million in 1964, and $2.4 million during the first seven months of 1965.

The United States, Japan, Britain, Belgium and the Netherlands are the principal customers.

TABLE XVIII

Crushings of Vegetable Oil Seeds and Production of Oil and Oil Meal, 1961-62 -- 1964-65 in Canada

	Crop Year			
	1961-62	1962-63	1963-64	1964-65
		Million Pounds		
Crushings				
Flaxseed	138	142	154	162
Soybeans	1,015	1,072	1,116	1,172
Other	72(1)	84(1)	93(2)	131(2)
Oil Production				
Flaxseed	48	49	53	56
Soybeans	177	184	193	201
Other	26(1)	32(1)	35(2)	50(2)
Oil Meal Production				
Flaxseed	86	86	96	102
Soybeans	792	837	883	930
Other	43(1)	49(1)	51(2)	72(2)

(1) Includes rapeseed, sunflower seed and safflower seed.
(2) Includes rapeseed and sunflower seed.

Source: D.B.S.

TABLE XIX

Canadian Production of Specified Oils and Fats Products, 1961–62 –– 1964–65

	Crop Year			
	1961–62	1962–63	1963–64	1964–65
	Million Pounds			
Margarine	190	176	170	168
Shortening				
Package	53	52	54	53
Bulk	121	129	134	138
Refined Oils				
Coconut	18	19	14	15
Salad and Cooking	65	73	76	70
Lard	105	98	105	104
Tallow				
Edible	40	40	46	51
Inedible	169	168	186	204
Grease, other than white	5	5	6	5
Other Oils and Fats (1)	6	7	9	6

(1) Includes oleo oil, oleo stearin, oleo stock, neatsfoot, white oil and other oils.

Source: D.B.S.

TABLE XX

Canadian Consumption of Oils and Fats in Margarine and Shortening (1), 1961–62 –– 1964–65

	Crop Year			
	1961–62	1962–63	1963–64	1964–65
		Thousand Pounds		
Margarine				
Vegetable Oils:				
Coconut	14,963	7,353	2,117	188
Cottonseed	4,117	3,197	3,158	3,747
Palm (2)	15,680	8,694	5,799	5,988
Soybean	57,195	48,514	63,928	73,479
Other (2)(4)	8,482	10,544	14,096	16,614
Totals	100,437	78,302	89,098	100,016
Marine and Fish Oils	43,456	60,482	43,979	28,715
Animal Oils:				
Lard	6,935	3,241	3,504	7,657
Edible Tallow	(3)	9	16	4
Other	47	23	–	–
Totals	6,982	3,273	3,520	7,661
Grand Totals	150,875	142,057	136,597	136,392
Shortening				
Vegetable Oils:				
Coconut	2,972	2,223	2,524	2,804
Cottonseed	7,818	6,831	8,226	11,000
Palm (2)	19,878	15,129	11,504	9,310
Soybean	49,696	52,698	61,344	58,405
Other (2)(4)	14,974	24,616	22,516	23,664
Totals	95,338	101,497	106,114	105,183
Marine and Fish Oils	19,248	24,336	14,820	13,812
Animal Oils:				
Lard	24,913	21,989	27,257	26,253
Edible Tallow	32,209	30,739	37,822	44,833
Other	2,700	3,438	1,704	1,310
Totals	59,822	56,166	66,783	72,396
Grand Totals	174,408	181,999	187,717	191,391

(1) All figures on a refined oil base.

(2) Includes palm kernel to December 1962 and from January 1963 included with "other".

(3) Included with "other".

(4) Includes rapeseed oil.

Source: D.B.S.

Developments in the Production of Margarine, Shortening and Refined Oils

1. Margarine

Canadian margarine production dropped by 22 million pounds from 190 million pounds in 1961–62 to 168 million pounds in 1964–65. This corresponds to a decrease in per capita consumption from 10.4 pounds to 8.7 pounds. Total production in 1965 has remained close to the 1964 level, but per capita disappearance continued to decline.

The use of marine oils in margarine reached a high in 1962–63, and has steadily declined since then. It dropped during the past crop year by 15 million pounds from 44 million to 29 million pounds. The price of competitive oils and probably also labelling regulations requiring the declaration of marine oils, account for this decrease.

The total volume of oils used in margarine did not change from 1963–64 to 1964–65, but a change took place in the types of oils used. Soybean oil usage increased by nearly 10 million pounds, lard by 4 million pounds, and a great deal more rapeseed oil must have been used than in previous years.

2. Shortening

Total shortening production increased during 1964–65 by less than four million pounds to 191 million pounds. The only major change in oil usage is the increase of tallow by seven million pounds to 45 million pounds. The consumption of cottonseed oil increased by nearly 3 million lbs., while palm oil dropped by 2 million lbs. and soybean oil by 3 million lbs. Soybean oil, tallow and lard are the major shortening ingredients. Under "other" we must include rapeseed oil, which accounts probably for most of the 23.7 million pounds. The proportion of bulk shortening of total production remained fairly stable, at somewhat above 70%.

3. Refined Oil

Production of salad and cooking oils decreased by nearly 8% over the previous year. Refined coconut oil production showed no change.

4. Butter

Production of creamery butter has been constant for the past five years.

1961 – 352 million pounds
1962 – 362 million pounds
1963 – 352 million pounds
1964 – 352 million pounds

Up to the end of October 1965, 302 million pounds have been produced, compared with 315 million pounds during the same periods of the past two years. Per capita consumption of creamery butter amounted to 18.3 pounds for the past year, which was a slight drop from a high of close to 19 lbs in 1963.

TABLE XXI

Canadian Production of Salad Dressings and Mayonnaise

(Million Pounds)

	1960	1961	1962	1963	1964	1965
1st Quarter	8.4	8.8	9.3	10.0	10.6	13.0
2nd Quarter	13.4	13.9	14.3	16.4	17.3	17.1
3rd Quarter	7.6	8.8	10.0	9.1	9.1	
4th Quarter	5.4	6.6	7.0	8.1	9.1	
Total	34.8	38.1	40.6	43.6	46.1	

TABLE XXII

Canadian Production of Sandwich Spreads

(Thousand Pounds)

	1960	1961	1962	1963	1964	1965
1st Quarter	1,027	947	918	1,138	981	1,173
2nd Quarter	1,129	1,012	1,230	1,147	1,391	1,332
3rd Quarter	889	971	922	780	1,024	
4th Quarter	872	947	844	998	1,023	
Total	3,917	3,877	3,914	4,063	4,418	

Source: D.B.S.

NOTE:

Mayonnaise, salad dressings and sandwich spreads contain liquid oils, especially soybean oil, cottonseed oil and rapeseed oil. The production of sandwich spreads shows no significant increase, while salad dressings and mayonnaise have risen more than 30% within five years.

TABLE XXIII

Canada: Inedible and Edible Tallow: Supply and Disposition

(Aug 1 – July 31 – 000 lbs.)

	Inedible		Edible	
	1963–64	1964–65	1963–64	1964–65
Opening Stocks	28,335	25,071	2,850	4,677
Production	186,129	204,361	45,689	50,685
Imports	–	–	8,169	7,282(1)
Total Supply	214,464	229,432	56,708	62,644
Exports	126,144	138,020	–	–
Domestic Disappearance	63,249	74,839	52,031	59,963
Ending Stocks	25,071	16,573	4,677	2,681

(1) Imports only till June 1965.

Based on D.B.S. data.

Inedible Tallow

Production increased by 18 million pounds, and exports by 12 million pounds over the preceding year (crop year). The value of inedible tallow exports increased from $7.2 million in 1963 (calendar year) to $10.8 million in 1964, and amounted to $7.25 million for the first seven months of 1965. – The U.K., Japan and Cuba have been the major customers for inedible tallow. In addition, the Netherlands, South Africa and Ecuador have bought large quantities this year.

Edible Tallow

Production increased by 5 million pounds during the past crop year. Edible tallow is all consumed in Canada and not exported. The import values represent a mixture of edible and inedible tallow, the former probably predominates.

TABLE XXIV

LARD: Canadian Supply & Disposition

(Aug 1 – July 31–000 lbs)

	1963/64	1964/65
Opening Stock	5,294	5,345
Production	109,389	104,071
Imports	16,204	14,344(1)
Supply	130,887	123,760
Exports	34	28
Domestic Disappearance	125,508	119,658
Ending Stocks	5,345	4,074

(1) Imports available until June 1965 only.

Based on D.B.S. data.

Lard production, imports, and domestic disappearance declined slightly during the past crop year.

Lard imports during 1963 (calendar year) amounted to $1.6 million, declined to $1.5 million in 1964, and were $791,000 during the first 6 months of 1965.

Lard consumption in margarine increased during the past crop year from 3.5 million lbs to 7.7 million lbs. Lard consumption in shortening dropped by one million lbs. to about 26 million lbs. Total use in these two products: 34 million pounds. This is 28% of the reported lard production, the remainder is sold as bulk and retail lard for baking. It should be noted that the production figures given in Table XXIV are too low, and attempts are being made to improve the gathering of data.

TABLE XXV

Canadian Production of Marine Oils by Types and Areas

(August – July, Million lbs. (1))

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. July 1965
Atlantic Coast					
Groundfish:					
Body and Offal	0.84	1.37	1.73	0.28	0.56
Liver	6.44	7.35	5.78	(2)	(2)
Herring	1.25	1.76	4.73	1.23	2.14
Other Fish Liver	–	–	–	2.94	2.25
Seal	1.68	1.72	0.66	(3)	(3)
Other	0.10	0.75	3.10	0.69	2.57
Atlantic: Total	10.31	12.95	16.00	5.14	7.52
British Columbia Coast					
Herring	42.20	50.60	47.80	16.02	18.80
National Total	52.51	63.55	63.80	21.16	26.32

Source: DBS No. 24–002

(1) Imperial gallons converted to pounds using factor of 9.25.

(2) Confidential, included with "Other".

(3) Seal oil production confidential, included with "Other". In other years seal oil production at times was confidential and was included under "Other". An exact production cannot always be determined.

Table XXV shows that Atlantic fish oils have ceased to be primarily low quality oils used for industrial purposes. In Nova Scotia and to a lesser extent in Newfoundland more herring has been caught for reduction to meal and oil. – West coast herring oil production decreased during the calender year 1964 by about 15% but has gained during January – July 1965 over the corresponding period of 1964.

Salmon Oil: Production of this oil has not been included in Table XXV, and its estimated production was:

1963 – 1.10 mill. lbs.
1964 – 0.71 mill. lbs.

Whale Oil: Whale oil produced on the Pacific coast has also not been included in Table XXV. Estimated production was:

1963 – 6.5 mill. lbs.
1964 – 9.8 mill. lbs.

Vitamin Oil: This was produced only on the Pacific coast and showed a further drastic reduction in output:

1963 – 1.263.375 M.U.
1964 – 681.578 M.U.

Total edible marine oil production remained at the same level in 1964/65 as in the preceding year. Liver oils – mostly inedible – tended to decrease, and Atlantic herring continued to increase.

TABLE XXVI

Canadian Exports of Marine Oils by Types

(August – July, Million lbs.)

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. July 1965
Cod Liver Oil, sun-rotted	9.98	7.04	6.08	4.65	3.77
Fish Liver Visceral Oil, nes.	0.04	0.13	0.03(1)	0.13	–
Herring Oil, nes.	0.06	11.09	13.47	10.17	0.35
Whale Oil	0.67	5.83	3.82	0.91	1.57
Fish & Marine Oil, nes.	0.61	1.19	1.13	0.41	0.43
Total	11.36	25.28	24.53	16.27	6.12

(1) Fish Liver and Visceral Oil not listed any more in 1965.

Source: D.B.S.

Sun-rotted cod liver oil is largely exported to the U.S.A. During the first 7 months of 1965, however, a higher proportion than usual, about 36% went to the U.K. – Herring oil exports dropped off drastically compared with the preceding two years. – Italy became Canada's most important customer for whale oil in 1965, the U.S.A. took the remainder; and the U.K., which used to be a major customer took none until July.

TABLE XXVII

Canadian Imports of Marine Oils by Types

(August – July, Million lbs.)

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. July 1965
Fish Liver & Visceral Oil, nes.	–	–	0.05(2)	0.08	0.02(2)
Fish & Marine Animal Oil, nes.	54.74	2.26(3)	7.14(1)	0.52	6.68(1)
Whale Oil & Spermaceti	0.79	0.25(4)	–	–	–
Total	55.53	2.51	–	0.60	–

(1) Figures until June.

(2) Figures until May.

(3) Includes whale oil in 1964, previously included in class 2297. Change in classification.

(4) Only last 5 months of 1963.

Source: D.B.S.

In 1962 and the first part of 1963 Canada imported large quantities of Icelandic herring oil, which virtually disappeared since then. U.S. Menhaden oil enters Canada, whenever its price is competitive. Early in 1965 Canada imported some fish oil from Chile. – The change in D.B.S. classification is partly responsible for the apparent decline in fish oil imports, since some products have been included with non-marine oils. – Cod liver oil imports for the calender years 1963 and 1964 ranged around 1 million pounds.

TABLE XXVIII

Canadian Production of Fish Meal by Type and Area

(August – July, Tons)

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. July 1965
Atlantic Coast					
Groundfish	29,146	25,320	31,765	13,559	20,124
Herring	5,012	3,364	9,552	2,124	5,429
Other	–	942	795	536	415
Total	34,158	29,626	42,112	16,219	25,968
British Columbia					
Herring	46,841	50,833	40,244	26,561	22,765
Total	80,999	80,459	82,356	42,780	48,733

Source: D.B.S.

Groundfish meal production has increased considerably this year as compared with a similar period in 1964. Pacific herring meal output declined but is largely made up by an increase in Atlantic herring meal. The reason for the increase in groundfish meal production is not easily explained, since total groundfish landings for this period rose only to 613 million pounds from 591 million pounds in 1964.

World Fish Meal Production

It seems that Peru, the world's largest fish meal producer, reached a peak in 1964. During the first 9 months of 1964 Peru produced nearly 1.2 mill. tons, versus approximately 1.0 mill. tons during the same period this year. Starting in July, Peru's fishmeal production declined drastically. United States fish meal production dropped during the first 2 months of 1965 to 136,000 tons from 142,000 tons in 1964. South Africa and Southwest Africa combined, increased their production during similar periods from 209,000 tons to 256,000 tons. Norway also increased its production to a considerable extent. Total world fish meal production records for 1964 are not yet available. In 1963 production amounted to approx. 3.4 million tons. Preliminary figures reported by the International Association of Fish Meal Manufacturers for its member countries indicate a production of close to 2 million tons for the first seven months of both 1964 and 1965.

Unless production in Peru and Chile continues to decline, world production will at least remain at last year's level. Increased consumption and a lack of supply has caused a spectacular rise in fish meal prices. In some places this may lead to the use of other protein meals, unless the price becomes more competitive.

TABLE XXIX

Canadian Exports of Fish Meal by Type

(August – July, Short Tons)

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. July 1965
Herring Meal & Pilchard Meal	38,870	50,535	41,450	34,290	25,200
Fish Meal nes.	9,590	10,990	14,450	3,740	6,175
Fish Cond. Homogenized Solubles	2,180	1,820	1,960	1,150	1,233
Total (Meal Only)	48,460	61,525	55,900	38,030	31,375

Source: D.B.S.

Canadian fish meal exports are limited by the controlled Pacific coast herring catch and the quantity of offal available for reduction on the Atlantic coast. Condensed fish solubles are mainly produced in B.C. – The average export price for herring meal rose from $145 per ton in 1964 to $160 during the first 7 months of 1965. Similarly the price for Fish Meal, NES rose from approximately $132 to $142 in 1965. Fish solubles are worth about $80 on the export market. Total exports of fish meal and solubles amounted to more than $9 million in 1965. 90% or more of the herring meal is exported to the U.S.A. Most of the Fish Meal NES, is produced on the Atlantic coast and is exported primarily to the U.K.

TABLE XXX

Canadian Fish Meal and Condensed Solubles Export 1965

(January – July)

	Tons	($–000)
Herring Meal and Pilchard Meal		
United Kingdom	2,410	357.8
U.S. Oceania	20	3.6
United States	22,770	3,647.7
Total	25,200	4,009.1
Fish Meal NES		
United Kingdom	4,418	624.4
Leeward Wind. Is.	1	1.7
United States	1,745	249.2
Total	6,164	875.3
Fish, Condensed Homogenized Solubles		
United States	1,233	101.5
Total	1,233	101.5

TABLE XXXI

Canadian Imports of Fish Meal

(Aug – July, Short Tons)

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. May 1965
Fish Meal	3,363	2,182	3,907(1)	1,054	71

(1) Values only till May 1965

Source: Trade of Canada

TABLE XXXII

Canadian Supply and Disposition of Marine Oils

(August – July, Million Pounds)

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. July 1965
Production	52.51	63.55	63.80	21.16	26.32
Imports	55.53	2.51	7.19(1)	0.54	6.70(1)
Exports	11.36	25.28	24.53	16.27	6.12
Domestic Disappearance	96.68	40.78	46.46	5.43	26.90

(1) Values incomplete; only till June 1965. – The following quantities of refined marine oils were used in the production of margarine and shortening:

1962/63 – 84.82 million pounds
1963/64 – 58.80 " "
1964/65 – 42.53 " "

Based on D.B.S. data.

NOTE:
Since inventory and carryover statistics are not available, above values for disappearance and consumption may show considerable discrepancy.

TABLE XXXIII

Canadian Supply and Disposition of Fish Meal

(August – July, Tons)

	1962/63	1963/64	1964/65	Jan. July 1964	Jan. July 1965
Production	80,999	80,459	82,356	42,780	48,733
Imports	3,363	2,182	3,907(1)	1,054	71(1)
Exports	48,460	61,525	55,900	38,030	31,375
Domestic Disappearance	35,902	21,116	30,363	5,804	17,429

(1) Values till May 1965.

Since no data on stocks were available, the domestic disappearance values do not indicate consumption.

Based on D.B.S. data.

TABLE XXXIV

Canadian Imports and Exports of Selected Fats and Oils

(crop year)

IMPORTS

(Million Pounds)

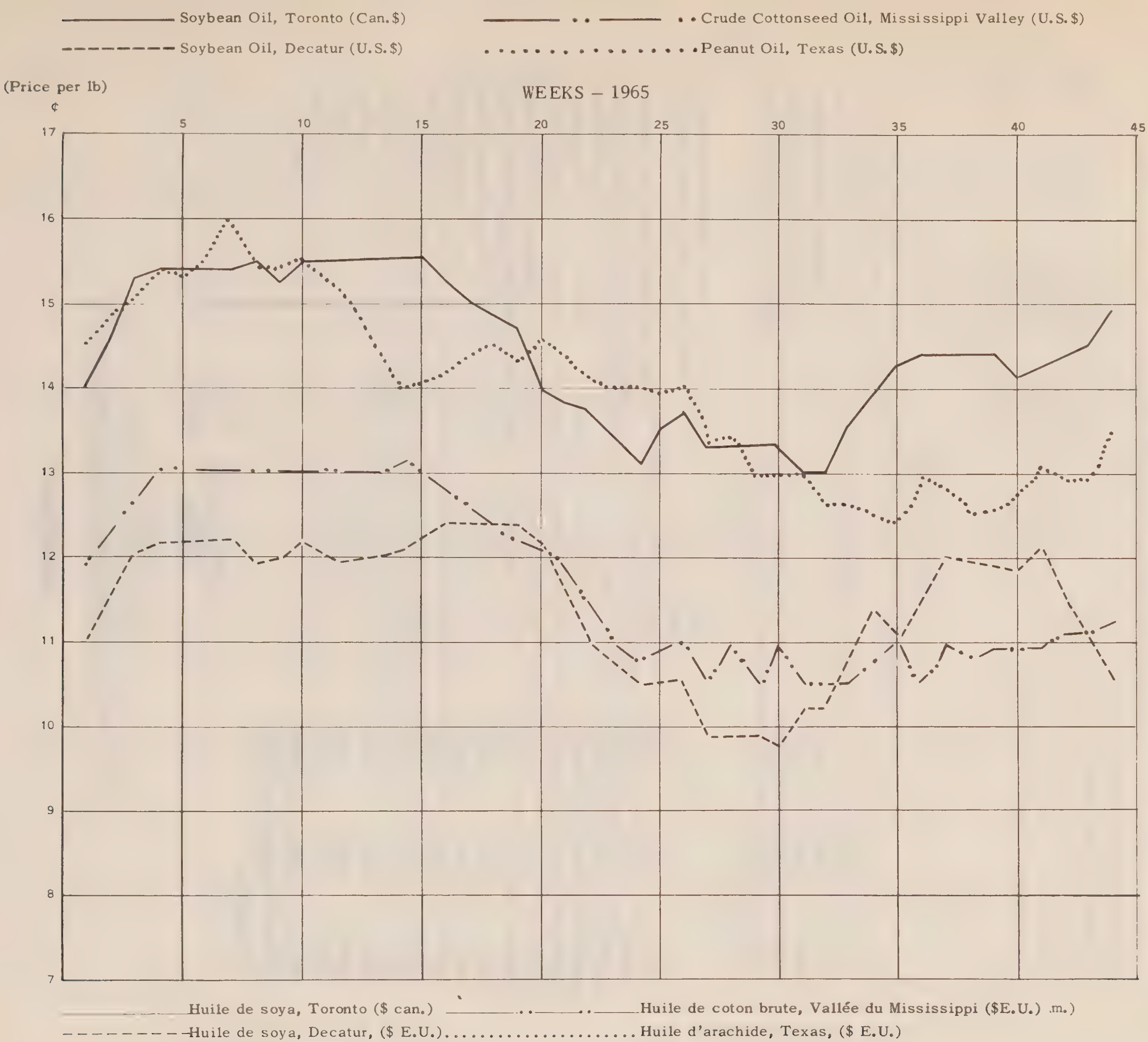
	1962–63	1963–64	(Aug–June 30) 1964–65
Cottonseed Oil	34.50	39.76	37.00
Palm Oil	23.41	17.43	19.35
Peanut Oil	18.60	17.94	8.26
Corn Oil	(2)	7.43	16.04
Palm Kernel Oil	5.83	7.74	7.93
Coconut Oil	44.13	39.10	35.10
Olive Oil	3.12	2.50	3.38
Cocao Butter	12.83	14.13	10.76
Animal Oils and Fats, NOP	4.97	2.03	0.64(1)
Veg. Cooking Fats and Pkgd. Salad Oils	(2)	(2)	6.70(1)
Margarine and Shortening	–	5.27	1.55(1)
Castor Oil	5.38	5.06	5.10(1)
Tung Oil	2.31	2.83	2.05(1)
Oiticica Oil	0.60	0.34	0.09(1)
Chem. Modified Oils, Fats and Waxes	–	–	13.80
Grease, Incl. Wool Grease and Lanolin	27.09	23.49	19.38(1)

(1) Data available only till May 1965.
(2) Included in other classes

EXPORTS

	1962–63	1963–64	(Aug–July) 1964–65
Vegetable Oils & Fats, NES	1.02	0.71	0.41
Animal Oils & Fats, NES	4.01	2.62	1.44
Margarine and Shortening	0.07	0.11	0.15
Butter	–	12.87	32.15

Source: Trade of Canada.



Soybean Oil, Toronto (Can.$)
Soybean Oil, Decatur (U.S.$)
Crude Cottonseed Oil, Mississippi Valley (U.S.$)
Peanut Oil, Texas (U.S.$)
(Price per lb)
¢
WEEKS – 1965
17
16
15
14
13
12
11
10
9
8
7
5
10
15
20
25
30
35
40
45
Huile de soya, Toronto ($ can.)
Huile de soya, Decatur, ($ E.U.)
Huile de coton brute, Vallée du Mississippi ($E.U.)
Huile d'arachide, Texas, ($ E.U.)

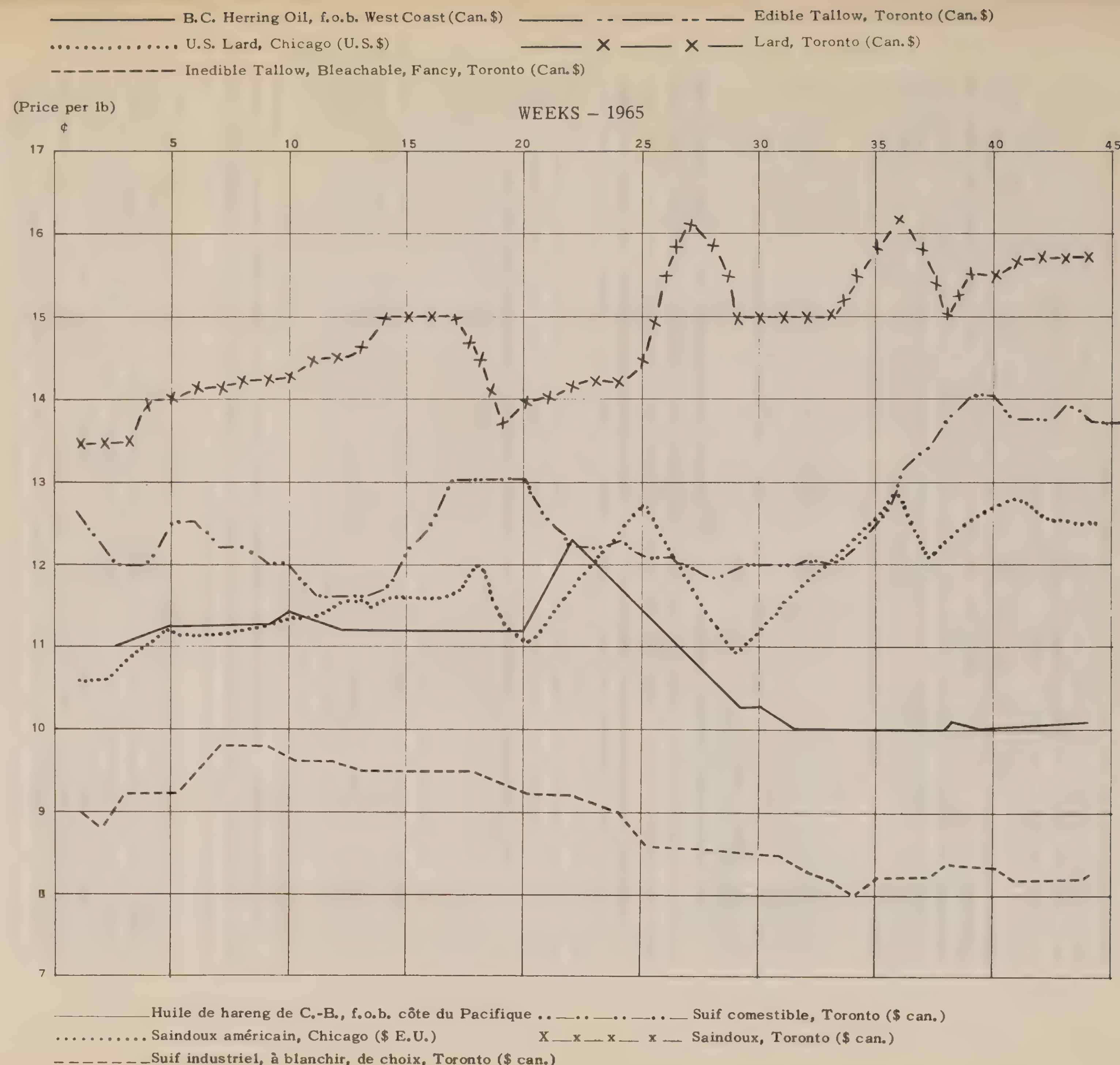

B.C. Herring Oil, f.o.b. West Coast (Can.$)
U.S. Lard, Chicago (U.S.$)
Inedible Tallow, Bleachable, Fancy, Toronto (Can.$)
Edible Tallow, Toronto (Can.$)
Lard, Toronto (Can.$)
(Price per lb)
¢
WEEKS – 1965
5
10
15
20
25
30
35
40
45
17
16
15
14
13
12
11
10
9
8
7
Huile de hareng de C.-B., f.o.b. côte du Pacifique
Saindoux américain, Chicago ($ E.U.)
Suif industriel, à blanchir, de choix, Toronto ($ can.)
Suif comestible, Toronto ($ can.)
Saindoux, Toronto ($ can.)

TABLE XXXV

Average Retail Prices for Canada for Certain Fats (cents)
1964–65

	1962	1963	1964	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Margarine, lb.	29.6	28.0	29.2	29.5	29.5	29.2	29.4	30.2	31.6	32.5	33.0	33.8	34.0	34.4	34.6
Shortening, lb.	34.9	34.6	35.9	35.9	36.0	36.2	35.9	36.6	37.3	37.6	38.2	38.2	38.6	38.7	38.6
Lard, pure, lb.	22.5	22.8	23.7	23.3	23.4	23.6	24.9	25.4	25.7	25.6	25.8	25.8	26.4	26.8	27.0
Salad Dressing Jar, 16 oz.	42.6	42.6	42.6	42.5	42.5	42.7	42.4	42.4	42.6	43.7	43.7	44.1	44.3	44.3	44.1
Butter, creamery, first grade, 1 lb. ...	62.1	58.5	58.9	59.1	59.1	59.3	59.5	59.9	59.9	59.7	60.1	60.3	60.9	61.9	62.2

Source: DBS: Prices & Price Indexes, #62–002

Comments on Retail Prices: (See Table XXXV)

The average retail prices are obtained by DBS in the following manner. Major brands, which have a large share of the market are selected in urban areas. Prices are measured for these same brands each time. After proper evaluation DBS arrives at the figures listed in the Table.

Margarine prices in July had advanced 15% in 1965, shortening prices 5%, lard prices 6%, salad dressing prices 4%, and butter prices slightly below 4%.

WORLD EXPORTS AND PRODUCTION OF OILSEEDS AT RECORD HIGH IN 1965

The following extract is taken from the August 26 issue of World Agricultural Production and Trade, published by the Foreign Agricultural Service, U.S.D.A. – The volume of oilseeds, oils and fats that will be traded on the world market in calendar year 1965 is forecast preliminarily at a record 10.8 million short tons, only fractionally more than the previous record of 1964. Currently, indications are that world exports may vary only slightly from last year's, despite the decline foreseen in exports from the United States, the source of over one-third of the world's total exports. The slight increase now projected results from aggregate expansion in exports from countries other than the United States.

Edible Vegetable Oils

Exports of edible vegetable oils this year will set a new record, presently forecast at almost 4.4 million tons. This would represent an increase of 7 per cent from the previous high of 1964 and would exceed the 1955–59 average by almost two-thirds.

An above-average tonnage of cottonseed and cottonseed oil probably will be traded this year, although moderately less than the record movement of 1964. The United States supplies the major portion of the cottonseed oil that enters world trade, and in 1964 U.S. exports were boosted to a record level by large Public Law 480 foreign donations from Commodity Credit Corporation stocks. Moreover, dollar sales were stimulated by the virtual elimination of the differential in prices of soybean and cottonseed oils in the last quarter of 1964.The unusually low price premium of cottonseed oil in relation to soybean oil has continued to stimulate strong export demand this year, and U.S. exports, though down somewhat from last year, again are expected to reach a high level of approximately

310,000 tons (calendar year). U.S. seed production from the 1965 cotton crop was estimated as of August 1 at 6.1 million tons, down one per cent from last year's. Large export supplies of cottonseed resulting from increased production may give rise to increased exports from the Sudan, following the small volume of 1964. And increased cotton production in Nicaragua and Syria also may result in slightly larger exports of seed this year. Exports of peanuts and peanut oil in 1965 may be slightly larger than last year's, possibly, exceeding the record level of 1963. Nigeria's exports are expected to decline for the second successive year, following two consecutive years of reduced production. Purchases for crushing and export from the 1964 crop are down from last year by more than 10 per cent. In contrast, exports from Senegal likely will increase in line with the moderate increase in purchases for crushing and export from the 1964 crop. Under terms of the marketing agreement with France that country has again agreed to take the major portion of Senegal's exportable supply.

Exports of soybeans and soybean oil this year are expected to be up, possibly about 10 per cent from last year and to exceed 2 million tons, oil basis, for the first time. The United States again, as in recent years, will account for close to 95 per cent of the total. Strong demand and record export availabilities in the United States are expected to result in a total movement of beans and oil to foreign destinations in excess of 1.9 million tons, oil basis. Exports of sunflowerseed and sunflowerseed oil in 1965 will gain sharply from the reduced volume of last year yet are expected to remain below the 1963 record. The gain chiefly reflects larger exports of both sunflowerseed and oil from the record Soviet crop harvested in 1964. Movements of oil from Argentina, following sharply increased availabilities from the harvest early this year, also will increase. These gains may be supplemented by larger exports of seed as such from Yugoslavia, and Bulgaria. In 1965 exports of rapeseed and rapeseed oil also will rise sharply to a new high, exceeding the previous record of 1958. The expansion is due largely to the expectation of record shipments of seed from Canada and France. Canada, whose 1965 rapeseed acreage has nearly quadrupled that of the annual average in the 1955–59 period, likely will attempt to expand sharply its exports of rapeseed from the unusually large crop now in prospect. France, also, reflecting sharply increased seedings, is expected to harvest a record crop and will very likely achieve record net exports. Exports from Sweden and Denmark probably will decline slightly.

World net exports of edible olive oil in 1965 are expected to decline by one-third from last year's record volume. The indicated decline, 14 per cent below the annual average of the 1961–64 period, chiefly reflects reduced movements from Spain, as well as estimates of an increase in intra-Basin trade due to larger imports by Italy and Portugal. This reduction in net trade results principally from the small oil outturn from the 1964 crop olives. The decline will, in part, be offset by increased exports from Turkey, Jordan and Syria. Exports from Tunisia also are expected to increase from those of a year ago, reflecting increased availabilities. Imports into France will probably decline as a result of higher prices, thus freeing a somewhat larger volume for net exports from the Basin.

This year's world exports of copra and coconut oil may be moderately less than the tonnage trade in 1964. There are no indications yet that exports of palm kernels and palm kernel oil will be significantly different from those of last year. Currently a decline in supplies appears likely. Exports during the last years averaged 27 per cent of the total world copra and coconut oil exports. World supplies of palm oil are expected to be slightly larger this year than last, reflecting primarily a higher level of output from Nigeria and the Malay States, offsetting reduced availabilities from the Congo (Leopoldville) and Indonesia.

Industrial Oils

Exports of industrial oils are expected to rise to a record level this year, exceeding last year's tonnage by possibly 10 per cent. The expansion will be due to a sharp increase in shipments of flaxseed and linseed oil and a moderate increase in exports of castorbeans and oil.

Present indications are that exports of flaxseed and linseed oil in 1965 will exceed those of 1964 by 10 per cent or more. Argentine oil has moved out at a sharply accelerated rate, totalling 193,000 short tons through June – 88,000 tons more than in last year's comparable period. Shipments during the last half of the year from a reported exportable supply of 276,000 tons should be reduced considerably, but the total for the year may exceed last year's by some 40,000 tons. The first official forecast of area seeded to flaxseed in Argentina for the 1965–66 season is 3 million acres, up 2 per cent from last year. Record exports of castorbeans and oil are expected this year, surpassing the previous high of 1964 by possibly 15,000 tons, oil basis. World tung oil exports this year are expected to decline slightly, reflecting reduced exports from Argentina and Paraguay despite anticipation of a further increase in exports from Mainland China.

United States Production & Supply Situation 1965

The following summary of the fats and oils situation in the United States has been taken from the August 20, 1965 issue of The Fats and Oils Situation published by the Economic Research Service, United States Department of Agriculture.

The total U.S. supply of soybeans during the marketing year beginning Sept. 1, 1965, is preliminarily placed at 894 million bushels, approximately 17 per cent more than the 767 million in 1964–65. Carryover stocks on September 1, 1965, are estimated at around 30 million bushels, the smallest since 1961. Based on August 1 conditions, the 1965 soybean crop is estimated at 864 million bushels compared with 700 million in both 1964 and 1963. Soybean acreage to be harvested for beans is up 13 per cent and yield prospects, at 24.9 bushels per acre, compare with only 22.8 bushels in 1964.

If production increases as expected, prices to soybean growers during the heavy harvesting season this fall probably will average close to the 1965 national support rate of $2.25 per bushel, which is unchanged from the 1964 rate. Last September–December, prices for the 1964 soybean crop averaged $2.59 per bushel, 34 cents above the support rate, reflecting the close balance between the 1964–65 soybean supply and the prospective season's requirements. The seasonal variation in soybean prices during 1965–66 is expected to follow a more normal pattern, with prices lowest at fall harvest time and highest in the spring. Prices normally advance during this period by the amount of storage charges. Soybean utilization likely will increase again during 1965–66 as the long-term uptrend in use continues. Lower soybean prices in 1965–66 are expected to stimulate crushings and exports to a new high – perhaps a tenth above the 690 million bushels (crush and export) estimated for the marketing year ending August 31, 1965. These early season prospects point to a substantially larger end-of-year soybean carryover on September 1, 1966, than the unusually small carryover of 30 million bushels now estimated for this September 1.

Early August crop prospects indicate a total U.S. supply of edible fats, oils, and oilseeds for the 1965–66 marketing year (starting October 1) of about 17.2 billion pounds (oil equivalent of oilseeds).

This is 5 per cent more than the 16.3 billion pounds available in 1964–65 and slightly above the 1963–64 record of 17.0 billion. While a further rise in domestic use and exports is in prospect, carryover stocks in 1966 probably will be larger than this year due to some buildup in soybean stocks.

Starting stocks of edible fats and oils (including the oil equivalent of soybeans, but excluding finished products) probably will total around 1.0 billion pounds, down sharply from the 1.7 billion pounds on October 1, 1964. The decline in beginning stocks is mainly in soybeans and edible vegetable oils (cottonseed and soybean). Output of edible fats and oils for 1965–66 is estimated at 16.1 billion pounds, 11 per cent more than in 1964–65. Production of butter is expected to be roughly the same as the year before whereas lard will be smaller and cottonseed oil may be down slightly. The increase in total output will be due almost entirely to the record 1965 soybean crop in prospect.

Domestic disappearance of edible fats and oils in 1965–66 probably will rise about in line with population growth – requiring an additional 125–150 million pounds (oil equivalent to around 12 million bushels of soybeans). This would leave approximately 7.0 billion pounds of food fats available for export and carryout stocks in 1965–66 compared with 6.1 billion during 1964–65. The export outlook for edible fats and oils (including the oil equivalent of soybeans) in 1965–66 appears about as favourable as the 5.1 billion pounds now estimated for 1964–65. More soybeans will be shipped abroad but less lard. The export demand for edible vegetable oils may be strengthened by a drought affecting olives in Spain, floods affecting sunflower seed production in the Danube Basin, and recent heavy rains affecting the harvest of the rapeseed and sunflower crops in Western Europe, and recent reports of extensive dry weather which may have included some sunflower regions of the U.S.S.R.

Note: 1) U.S.D.A. in November lowered its estimate of the 1965 soybean crop from 862 million bushels to 853 million bushels and the expected acreage yield from 24.9 to 24.6 bushels!

2) Soybean prices in the fall of 1965 remained well above the support level of $2.25.

SAFFLOWER OIL: PRODUCTION AND UTILIZATION AS EDIBLE OIL

Commercial safflower seed cultivation has disappeared in Canada after a brief start in the late 1950's. World safflower seed production in 1964 was estimated to be 640,000 tons as against 750,000 tons in 1963. The U.S.A. accounts for nearly half the output, and is closely followed by India. Mexico and Australia also grow smaller quantities. Most of the U.S. safflower seed crop is exported as seed to Japan: 242,000 tons in 1964 and 252,000 tons in 1963.

The United States increased its safflower acreage very rapidly around 1959–1963 when dietary studies indicated a beneficial effect of polyunsaturated acids in the treatment of certain cardio vascular disorders.

J. Blum (1) gives the following estimates for edible safflower oil consumption in the U.S.A.:

Year	Million Pounds
1958	0.4
1959	1.5
1960	2.0
1961	45.0
1962	38.0
1963	50.5
1964	38.3
1965 (Jan–Jul)	17.1

It seems that less than half the available supply of safflower oil in the U.S. is consumed for edible purposes. The remainder is used as a drying oil in the paint and varnish industry.

J. Kneeland [2] has described the effect of breeding on seed composition:

SAFFLOWER SEED COMPOSITION (%)

	Old	Present	Future
Hull	48	35	20
Oil	27	40	48
Protein	12	14	20

Similar to sunflower seed, the reduction of hull content is improving the value of this crop. On a dry basis the kernel contains approximately 63% oil.

The oil has the following fairly constant fatty acid composition:

Palmitic	6.6%
Stearic	2.5%
Oleic	12.9%
Linoleic	78.0%

New varieties have been bred whose oleic acid content has been raised to a range of 74–87% with a corresponding reduction of linoleic acid. According to Dr. T.A. Applewhite of U.S.D.A, varieties of this type will be released this year.

The following minor constituents have been reported: [3]

Unsaponifiables	0.87 – 1.26%
Phospholipids	1.1%
Sterols	0.36%

The tocopherol content ranges from 200–920 mg/kg, and is not sufficient for adequate natural antioxidant protection. The iodine value varies from 143–147 – Moser at al [4] and Blum [1] have shown that the flavor stability of salad oil made from safflower seed compare favourably with cottonseed or soybean oil.

Blum reports that safflower oil can be easily hydrogenated to be used in margarine or shortening, but the oxidative stability is significantly below cottonseed oil, soybean oil or corn oil, when hydrogenated to the same degree.

Polymorphism presents a problem in hydrogenated safflower oil, and can best be overcome by blending with stocks of different glyceride composition.

Safflower oil has a high natural cold test and is well suited for salad dressings, mayonnaise, frozen desserts, imitation creams, etc. The liquid oil has been blended with hydrogenated vegetable oils in margarine, shortening, fluid shortenings and emulsified bread shortening. The high cold resistance of safflower oil permits these products to remain plastic throughout a wide range of temperatures.

Safflower oil possesses some properties which recommend its use in edible products. The findings of nutritional studies and the price of the oil will act as the major factors determining the extent of its future use.

(1) J. Blum, A.O.C.S., Cincinnati Meeting, 1965.
(2) J. Kneeland, A.O.C.S., " " "
(3) T. Applewhite, A.O.C.S., " " "
(4) H.A. Moses, C.D. Evans, T.C. Cowan, J.A.O.C.S., 42; 30 (1965).

A Report on the National Research Council's "Canadian Committee on Fats and Oils" Annual Meeting.

This year's meeting featured a one-day symposium on Polyunsaturated Fatty Acids in Nutrition in addition to the regular business sessions. Both were well attended by representatives from industry, Government and academic institutions.

The symposium included papers presented by the following:

Dr. H. Brockerhoff:	Positional distribution of polyunsaturated fatty acids in triglycerides of dietary fats.
Dr. F. Mattson:	The hydrolysis and absorption of polyunsaturated fats.
Dr. R. Holman:	The metabolism and nutrition of polyunsaturated acids.
Dr. R. Reiser:	The pros and cons of the efficacy of poly-unsaturated acids to reduce serum cholesterol levels.
Dr. B.B. Migicovsky:	Inhibition of cholestrol synthesis by a naturally occurring substance in liver mitochondria.

At the business meeting a large number of reports were given on research and development carried out during the past year across Canada. Some highlights:

a. Dr. G. Armstrong, Food Research Institute, discussed the work done so far by FAO/WHO to establish international standards of identity for fats and oils as part of the proposed Codex Alimentarius. Canada is playing an active role in the proceedings.

b. Mr. F. Lehberg, Department of Industry, stressed that future expansion in fats and oils utilization will have to be found in the oleo-chemical field. Canada, through co-operation between industry and government, will have to establish an R & D program to provide the basis for this type of industrial expansion.

c. Most of the industry representatives stressed the need for research to improve marine oil quality, as well as the demand for larger supplies of high quality, especially from the Atlantic coast.

d. One company presented a detailed report on the evaluation of the new zero-erucic acid rapeseed oil, renamed Canbra, short for Canadian brassica, as a salad oil. Partial hydrogenation to reduce the linolenic acid to below one per cent improved the flavor stability, and showed a distinct advantage over some other oils by maintaining a yield of 95% after winterization. The flavor stability of the original oil is similar to regular rapeseed oil, and also gives a similar to regular rapeseed oil, and also gives a similar reverted flavorer.

   When hydrogenated for shortening manufacture, and formulated with animal fat, etc. so that Canbra oil amounted to 64% of the blend, the shortening had physical properties virtually indistinguishable from shortening made from regular rapeseed oil.

e. The same company also investigated the practical value of chufa or tiger nut oil, reported on by Dr. C. Y. Hopkins, NRC, at last year's meeting. This oil has the following fatty acid composition:

C_{16}	:	13.8%
C_{18}	:	3.0%
$C_{18:1}$	:	69.0%
$C_{18:2}$	:	13.2%

   and an iodine value of 82.8. In flavor and AOM stability this oil compares favourably with liquid cottonseed oil. This oil requires winterization, yielding 80%.

Problems: (1) further work will be undertaken to examine whether this crop can be grown satisfactorily in Canada. It is a nut, growing underground, and usually needs a mild or subtropical climate.

(2) The meal is largely carbohydrate, containing only 8% protein.

f. Dr. Chalmers, Vancouver, reported about the world's only bulk producer of alpha-glycerol ethers, derived from dogfish. Glyeryl ethers have medical applications, and are used to combat radiation sickness in cancer patients, have anti-inflamatory properties, etc.

g. Dr. C. G. Youngs, reported on continued work concerning the properties of rapeseed oil from different grades of seed. Laboratory-extracted oil agrees in quality fairly well with the seed grade as establish by the Board of Grain Commissioners. Factory-extracted oil may vary, and this is leading to further investigation of the effect of commercial extraction on oil quality. Dr. Youngs has developed a fast and probably reliable micro-method for sulfur determination in rapeseed oil. This method will be applied in investigations of the relation of the sulfur compounds present in rapeseed oil to the rate of hydrogenation.

The Executive Committee of the Canadian Committee on Fats & Oils has recommended to the NRC to appoint Dr. B. M. Craig, Senior Scientist, NRC, Prairie Regional Laboratory, Saskatoon, Sask., as the new Chairman of the Canadian Committee on Fats & Oils to succeed Dr. J.M.R. Beveridge, President of Acadia University.

NEW CANADIAN STANDARDS FOR RAPESEED OIL

A Committee set up under the auspices of the Institute of Edible Oil Foods, and composed of all refiners in Eastern Canada, has established the following standards for Rapeseed Oil: Crude and Crude Degummed. The Western Canadian rapeseed crushers have examined and approved these standards.

Characteristic	Requirement Grade A	Grade B	Test Method
Free fatty acid (as oleic acid), max. %	1.0	1.0	Ca-5a-40
Moisture) Combined) max. Impurities) %	0.5	0.5	Ca-2b-38 or Ca-2c-25 or Ca-2d-25 Ca3-46
Flash point, min. °F	300	300	Cc-9b-55
Refined bleached color, max.	1.5 Red	1.5 Red	Ca-9a-52 (hydraulic cottonseed stipulation) and Cc-8b-52b (2% official activated bleaching earth employed)

Characteristic	Requirement Grade A	Grade B	Test Method
Green color, crude-oil stipulation, lighter than	Std. A	Std. A	Par. 5.2.1
Loss, dry basis, max. %	2.0	1.5	Ca-9f-57
Phosphatide content, max. %	–	0.60	Par. 5.2.2

NOTE: Grade A: Crude
Grade B: Crude, Degummed

A complete outline of these standards (32-GP-300, 17 September 1965) with comments was published by the Canadian Government Specifications Board, Ottawa 4, Ontario, Canada.

Copies are available at a cost of 15¢ from:

The Secretary
Canadian Government Specifications Board.
Department of Defence Production
Ottawa 4, Canada.

RAPESEED MEAL FOR LIVESTOCK AND POULTRY PRODUCTION

A REVIEW

AS REVIEWED BY S. J. SLINGER
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On the whole, this review represents a very complete and up-to-date coverage of the subject at hand. The authors of each of the eight chapters have personally played leading roles in the research and development in their respective fields and obviously speak with authority. The final chapter presents an excellent summary of the present status of rapeseed meal as a protein supplement.

The point is rightly stressed by several of the authors that modern methods of processing have resulted in better quality products than those available ten to fifteen years ago. Solvent extraction of the oil or a combination of expeller and solvent processes permits the meals to be processed at considerably lower temperatures than with the old expeller method. As a result, the content of certain amino acids, particularly lysine and tryptophan, are much higher in the present-day meals.

In selecting protein supplements for diet formulation, the feed manufacturer evaluates the products available on the basis of nutritional worth, a job which is most efficiently accomplished by the use of an electronic computer. The value of least cost rations can be no better than the information supplied to the computer. While the results of many experiments are reviewed which serve to set the use-limits of rapeseed meal for various classes of livestock, it would be desirable to have additional information concerning the levels and biological availabilities of more of the factors of critical importance to the feed formulator.

From an economic point of view, energy and protein are of primary concern. Considering the significance of energy, in rations for monogastric species in particular, considerable emphasis should be directed to the relative available energy content of rapeseed and other vegetable meals. It is pointed out that rapeseed meal contains, on the average, 9.3 – 15.5% crude fiver, which is higher than for most vegetable meals. The relatively high fiber content is probably one reason for the finding in our laboratory (Poultry Sci. 42:707, 1963) that a sample of solvent extracted rapeseed meal contained only 1.53 Kcal. of metabolizable energy per gram of air dry product for the chick as compared with values of 2.73 for corn gluten meal and 2.27 for sunflower seed meal in the same experiment; the average metabolizable energy value based on several samples of 44% protein soybean meal was found to be 2.27 Kcal. per gram. Other factors than fiber are perhaps also involved in the relatively low available energy value for rapeseed meal, since sunflower seed meal is also relatively high in crude fiber content.

In view of the lower energy content of rapeseed meal as compared with soybean meal, the former should not be expected to be capable of replacing any appreciable quantity of the latter in diets for monogastric species without an appropriate adjustment in available energy. Without such adjustment the birds will over-eat and efficiency of feed utilization will be lowered. This has been demonstrated in our laboratory with both chicks and hens (unpublished). In the hen study, for example, when 9 or 18% of solvent rapeseed meal was used to replace soybean meal on a crude protein equivalent basis, 0.13 and 0.4 more pounds of feed were required to produce a dozen eggs than with the respective soybean meal controls.

In the above hen study egg size was reduced by feeding rapeseed meal, suggesting that, for the hen, protein quality of rapeseed meal may not be as good as that of soybean meal. That such may be the case is borne out by determination of "Net Protein Utilization" of this product as compared with soybean meal. This is a measure of nitrogen retention; the method corrects for maintenance and is considered to be one of the better nitrogen retention techniques. In one report (J. Sci. Food. Agri. 12:658, 1962) solvent rapeseed meal plus 0.4% lysine had an N.P.U. value of 50.9, while dehulled soybean meal plus 0.2% methionine had a value of 68.8 for the growing chick. Work in our laboratory (unpublished) indicated another sample of rapeseed meal to have an N.P.U. value of 58.1, while soybean meal plus 0.17% methionine had a value of 67.9; in this work, supplementation of the rapeseed meal with lysine did not improve its value. Merely because a protein supplement has a low N.P.U. value when fed as the sole source of protein does not imply that there is anything wrong with the product when properly supplemented. Certainly, there should be no problem with protein quality at the levels of rapeseed meal being recommended by the various authors.

A number of published experiments have indicated little or no difference in results using diets containing low levels, such as 2 – 4% of rapeseed meal replacing soybean meal on a crude protein equivalent basis. It should be pointed out that such a test is rather non-critical as a measure of protein quality, since evidence indicates that even a low quality protein such as supplied by hydrolyzed feather meal will give just as good results as the same amount of protein from soybean meal after the requirements for all the essential amino acids have been satisfied and the need is for only non-specific nitrogen. There is also the problem of measuring the small differences that can logically be expected in low level replacement studies; the absence of significant differences sometimes results from failure to have a sufficiently extensive experiment to measure the small differences to be expected and should not be taken to indicate equality.

A good deal of attention is given to the growth inhibiting factors in rapeseed meal which are derived from thioglucosides present which yield isothiocyonates and oxazolidinethione upon hydrolysis by the enzyme myrosinase also present in the raw meal. In modern processing, the enzyme is destroyed by the steam heat and the toxic factors are left bound in the original glucoside, thus producing a

superior meal to that produced by the expeller process. Unfortunately, myrosinase can be introduced from certain other sources such as the gastrointestinal tract where it is produced by certain common bacteria. Thus, the suggestion that the only satisfactory method of counteracting the effect of the "toxic" factors is to limit the use-levels of the meal seems warranted.

Modern varieties of rapeseed contain approximately 40% of oil, 50% of meal and 10% moisture. Thus, the lipid fraction is of considerable economic importance. It is pointed out that there is wide variation in fatty acid composition within and between species but that sufficient information is not available from industry and nutritional studies to indicate what plant breeders should strive for as far as fatty acid composition is concerned. The model suggested seems very similar to corn oil. From the nutritional point of view, one might think that soybean oil would make a satisfactory model. No one can dispute the desirability of breeding to reduce the level of erucic acid to zero. However, there is a question as to the suggestion to reduce the level of linolenic acid to zero. While a zero level of linolenic acid may contribute to keeping quality, there is evidence in the literature (Lancet, Nov. 7, p. 975, 1964 and Thrombosis Diathesis Haemorrhagica, Vol. 13, 15 III, No. ½, 1965.) to suggest that thrombosis formation in atherosclerosis can be favourably influenced by dietary linseed oil or linolenic acid but not by corn oil or linoleic acid.

One cannot help but be impressed by the tremendous strides which have been made to improve the rapeseed crop picture to date. There seems little doubt that even greater progress is in store for the future.

A SMALL QUANTITY OF ERUCIC ACID FREE RAPESEED OIL AVAILABLE TO INDUSTRY

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CANADA DEPARTMENT OF AGRICULTURE
SASKATOON, SASK.

The elimination of the fatty acid, erucic, from rapeseed oil has been a major breeding objective in Canada. Plants producing this new type of oil (Table 1) were isolated in 1961 from a variety unadapted to Canadian conditions. By 1965 strains had been developed by the Canada Agriculture Research Station, Saskatoon, which were equal to the standard varieties Golden, Nugget, and Tanka in seed yield and maturity. However, these strains were not licensed since they were slightly lower in oil content than the commonly grown varieties and there were also several unanswered questions concerning the handling and marketing of this new kind of seed and oil.

It was not known (a) whether this new type of rapeseed oil would be superior to common rapeseed oil for all commercial products, (b) whether industry would be willing to pay a small premium for this type of oil, (c) whether strains could be kept pure under commercial production, and (d) whether it was practical and economical for an oil extraction mill to offer more than one type of rapeseed oil to secondary processors.

The Vegetable Oil Division of the Saskatchewan Wheat Pool was sufficiently interested in these questions to undertake contract production of zero erucic acid rapeseed in 1965. Seed supplied by the Canada Agriculture Research Station was placed under contract with four growers in northern Saskatchewan. The 320 acres sown produced over 410,000 pounds of seed. Sufficient seed was retained for 1966 plantings and the remainder crushed. Approximately 160,000 pounds of oil was obtained.

As yet not all the oil has been committed. Firms interested in obtaining some of this oil for test purposes should contact the Saskatchewan Wheat Pool, Vegetable Oil Division, Box 109 Saskatoon, Sask.

Information obtained to date suggests that contract production of special rapeseed oil types is feasible and that purity can be maintained. However, the crusher must have some indication from industry prior to seeding as to the possible market for this new oil type. It is hoped that industry will take this opportunity to conduct tests on this new oil type and establish the place of zero erucic acid rapeseed in the secondary processing field.

TABLE 1

Per cent fatty acid composition – Golden, Nugget and Zero Erucic Acid Rapeseed

Fatty Acid*	Symbol	Golden	Nugget	Zero erucic
Palmatic	C16:0	3.3	3.3	4.7
Stearic	C18:0	1.1	1.5	1.8
Oleic	C18:1	18.6	22.5	63.3
Linoleic	C18:2	14.0	12.2	20.0
Linolenic	C18:3	7.8	5.4	8.9
Eicosenoic	C20:1	13.4	14.2	1.3
Erucic	C22:1	41.8	40.6	0.0

*Minor amounts (less than 1%) of palmitoleic, eicosadienoic, behenic, and arachidic acids may also be present.

CONVERSION FACTORS

OILSEEDS: Statutory Weight per Bushel and Average Volume per Short Ton.

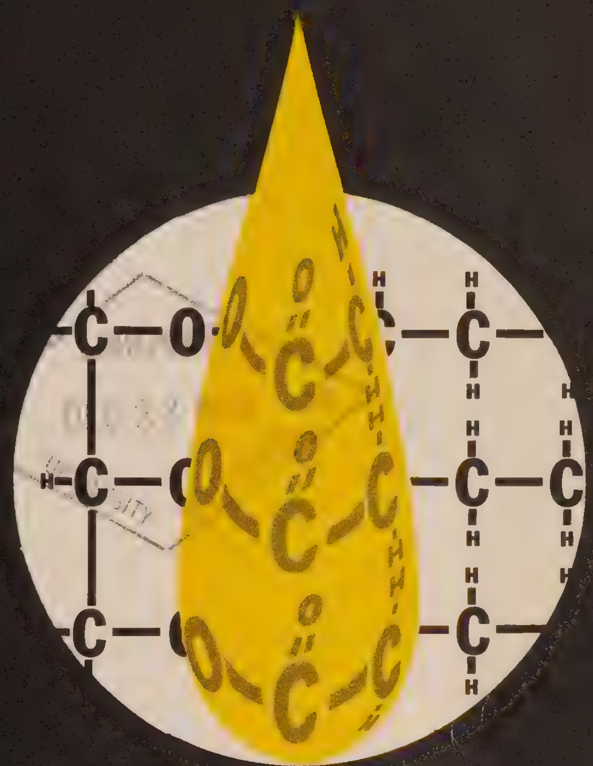
	Pounds	Cubic Feet
Flaxseed	56	45.9
Soybeans	60	42.8
Rapeseed	50	51.4
Sunflower Seed	30	85.7
Mustard Seed	–	51.4

OILSEED PRODUCTS

	Extraction Rate (Percent)	Yield per Bushel (Pounds)	Weight of Gallon (Pounds)
Flaxseed, Crude Oil	35.4	19.8	9.3
Linseed Oil	61.7	34.6	–
Soybeans, Crude Oil	17.7	10.6	9.2
Meal	80.0	47.3	–
Rapeseed, Oil	40.0	20.0	9.1
Meal	60.0	30.0	–
Sunflower Seed, Oil	33.0	10.0	9.2
Meal	33.0	9.3	–
Mustard Seed, Oil	19.0	–	–
Meal	70.0	–	–

ROGER DUHAMEL, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1966

FATS AND OILS IN CANADA / SEMI ANNUAL REVIEW



DEPARTMENT OF INDUSTRY FOOD PRODUCTS BRANCH

JULY 1966

DEPARTMENT OF INDUSTRY

FATS & OILS IN CANADA

Semi-Annual Review

July 1966

Prepared by: Edible Oils Section
Food Products Branch
Department of Industry
Ottawa, Canada.

Vol. 1, No. 2.

INTRODUCTION

This is the second issue of "Fats & Oils in Canada", a semi-annual review, prepared by the Food Products Branch. It contains in one publication statistical information of relevance to the fats and oils industry in Canada, as well as an analysis of these data.

In addition "Fats & Oils in Canada" reports on significant technical and economic developments in Canada and abroad wherever they are likely to affect the Canadian industry.

The Canadian statistical data are based on material provided by the Dominion Bureau of Statistics, Department of Agriculture, Department of Fisheries and the Department of Trade & Commerce. Additional statistics are obtained from a variety of domestic and foreign sources.

"Fats & Oils in Canada" is meant to be a working document for people interested in the development of the Canadian fats and oils industry. Suggestions and comments on this publication are welcome.

Food Products Branch.
Department of Industry,
OTTAWA, July 1966.

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CANADIAN FATS AND OILS REVIEW

Highlights

1. Production: Changes in 1965 Compared with 1964

(a) Total estimated Canadian edible fats and oils production declined from 741 to 724 million pounds (whale oil not included). Production of inedible fats and oils declined from 280 to 278 million pounds.

(b) **Oil Equivalents of Canadian Grown Oilseeds** (Table 1)

Soybeans: increase from 74 to 85 million pounds.
Rapeseed: increase from 248 to 428 million pounds.
Flaxseed: increase from 402 to 553 million pounds.
Sunflowerseed: no change; 10 million pounds.

(c) **Oilseed Crushings** (Table 6)

Soybeans: increase from 1,158 to 1,173 million pounds.
"Other Oilseeds" (primarily rapeseed): increase from 108 to 150 million pounds.
Flaxseed: decline from 171 to 159 million pounds.
Continued growth of total crushings resulted primarily from increased rapeseed processing.

(d) **Animal Fat Production** (Table 1)

Edible animal fat production declined from 440 to 416 million pounds as a result of lower butter and lard output.

(e) **Herring Oil** (Table 1)

Production remained unchanged at 49 million pounds, as a result of an increase in output on the Atlantic coast offsetting a decrease on the Pacific coast.

(f) **Inedible Fats and Oils** (Table 1)

Inedible tallow production increased by 3 per cent from 199 to 204 million pounds. Linseed oil production dropped by 7 per cent from 59 to 55 million pounds.

(g) **Finished Products** (Table 61)

Margarine production continued to decrease and dropped by 4.5 per cent from 175 to 167 million pounds. Packaged shortening production declined by 5.5 per cent from 54 to 51 million pounds, while bulk shortenings maintained the level of approximately 140 million pounds. Salad and cooking oil production rose from 72 to 74 million pounds.

2. Imports: Changes in 1965 Compared with 1964

Canadian fats and oils imports, excluding the oil equivalents of soybeans and flaxseed, rose from $38.7 million to $45.5 million, the component classes showing the following developments:

(a) **Primarily Edible**

Substantial increases in the value of imports of coconut oil, palm oil, cottonseed oil, salad and cooking oils, as well as of lard, accounted mainly for the increase from $34.3 to $41.5

million. Except for coconut oil, the increase in value of each imported oil was accompanied by a rise in volume.

(b) **Primarily Inedible**

Imports declined from $4.3 to $4.0 million, mainly as a result of a decline in imports of greases. Castor oil imports rose from approximately $618,000 to $801,000.

(c) **Soybeans** (Table 7)

Imports declined by 13 per cent from 548,000 to 478,000 tons, i.e. from $52.9 to $46.3 million.

(d) **Soybean Meal** (Table 14)

Imports increased by 11.7 per cent from 446 to 498 million pounds, i.e. from $17.4 to $20.7 million.

3. **Exports: Changes in 1965 compared with 1964**

(a) Exports of fats, oils and oilseeds (excluding mustard seed) increased from $97.4 million (oil equivalent 633 million pounds) to $116.6 million (oil equivalent 771 million pounds). Exports of butter oil from Government-held stocks have not been included in these calculations (Table 3).

(b) Oilseed exports (excluding mustard seed) rose from $65.4 to $93.5 million, an increase of 43 per cent, and accounted in 1964 for 67 per cent and in 1965 for 80 per cent of the combined fats, oils and oilseeds exports. Near tripling of rapeseed exports to $30.9 million was the major factor in the increase (Tables 3, 8, 18, 21, 36).

(c) The value of the exports of edible fats and oils declined from a total of $18.2 to $7.2 million, i.e. from 81.3 to 49.5 million pounds.

The following changes played the greatest role:

Butter (oil equivalent)	– decrease from 29.2 to 2.3 million pounds.
Herring oil	– decrease from 23.3 to 7.6 million pounds.
Soybean oil	– increase from 25.0 to 34.7 million pounds.

(d) Soybean meal exports rose from 229,000 tons ($21 million) to 256,000 tons ($24 million) (Table 15).

TABLE 1

Canadian Production of Fats and Oils

(000 pounds)

	1963	1964	1965
Primarily Edible:			
Vegetable Oils:(1)			
Soybeans (oil equivalent)(2)	53,000	74,000	85,000
Soybean oil (3)	186,750	200,318	198,588
Rapeseed (oil equivalent)(4)	156,700	248,000	427,500
Rapeseed oil(5)	33,088	40,814	58,115
Sunflowerseed (oil equivalent)(6)	12,000	10,000	10,000
Sunflowerseed oil(5)	–	–	–
Total (7)	219,838	241,132	256,703

TABLE 1 (Concl.)

Canadian Production of Fats and Oils

(000 pounds)

	1963	1964	1965
Animal Fats:			
Edible tallow	42,130	49,588	49,950
Lard	100,038	108,177	96,769
Butter (as butter oil)(8)	282,000	282,000	269,500
Total	424,168	439,765	416,219
Marine Oils:			
Herring	54,200	49,230	48,890
Seal	1,534	1,270	2,350
Whale	6,500	9,800	N.A.
Total(9)	62,234	60,300	51,240
Total Edible Oil Production	706,240	741,197	724,162
Primarily Inedible			
Flaxseed (oil equivalent)	419,000	402,000	553,000
Linseed oil	46,733	58,935	54,858
Inedible tallow	174,471	198,653	204,392
Grease, other than white	5,286	5,951	4,846
Other oils and fats(10)	8,147	7,792	6,585
Marine oils	8,820	9,017	7,545
Total Inedible Oil Production(11)	243,457	280,348	278,226
Total Edible and Inedible Fats and Oils Production (excluding oil equivalents of oil seeds)	949,697	1,021,545	1,002,388

Source: Based on DBS Data.

(1) Corn oil and cocoa butter are not included, since production values are not published.

(2) Soybean oil equivalent: 17.7 per cent (conversion factor used). Actual recovery varies from year to year and was 16.9 per cent in 1965 in Canadian mills.

(3) Soybean oil production is based to approximately 75 per cent on imported beans.

(4) Rapeseed: oil equivalent: 37.5 per cent (conversion factor used). Board of Grain Commissioners determined 43.5 per cent on a dry basis in 1965.

(5) Rapeseed oil; includes sunflowerseed oil.

(6) Sunflowerseed: oil equivalent: 33 per cent (conversion factor used). Sunflowerseed production includes a substantial part used for birdseed and confectionary purposes.

(7) The total edible vegetable oils include only soybean oil and rapeseed oil produced by Canadian oilseed crushers.

(8) The animal fat total includes the butter oil equivalent of butter. Milk fat is not included.

(9) Whale oil values for 1965 were not available — Some salmon and redfish oils which may have been produced for human consumption could not be separated from inedible oils in DBS statistics and are, therefore, included under "Marine Oils" in the inedible section, which mainly comprise offal oils and sun-rotted liver oils.

(10) Other oils and fats: includes oleo oil, oleo stearin, oleo stock, neatsfoot, white oil and other oils.

(11) Includes only oils actually produced as such, and excludes oil equivalent of flaxseed.

TABLE 2

Canadian Imports of Fats and Oils

(000 pounds)

	1963	1964	1965
Primarily Edible			
Vegetable Oils:			
Soybeans (oil equivalent)	150,500	194,200	168,500
Soybean oil	29,613	34,505	29,946
Cottonseed oil	38,528	37,422	47,646
Corn oil	(1)	17,067	14,377
Peanut oil	18,580	9,647	9,247
Coconut oil	37,845	39,750	39,618
Palm oil	25,483	13,112	18,913
Palm kernel oil	8,080	7,327	9,877
Olive oil	1,912	3,705	2,731
Cocoa butter	11,766	13,157	13,185
Vegetable Oils and Fats(2)	28,429	5,256	7,488
Chem. Modified Oils, Fats and Waxes(3)	9,900	14,556	12,989
Vegetable Cooking Fats and Pack. Salad Oils	(2)	4,143	9,254
Margarine and Shortening	4,447	5,129	3,526
Total (4)	365,083	398,976	387,297
Animal Fats:			
Lard	17,133	16,001	20,734
Tallow(5)	–	–	–
Butter	–	–	–
Total	17,133	16,001	20,734
Marine Oils:			
Fish and Marine Animal oil(6)	24,165	980	7,981
Whale & Spermaceti	648	(3)	(3)
Total	24,813	980	7,981
Total Edible Oils and Fats	407,029	415,975	416,012

TABLE 2 (Concl.)

Canadian Imports of Fats and Oils

(000 pounds)

	1963	1964	1965
Primarily Inedible			
Flaxseed (oil equivalent)	21	1,290	123
Linseed oil	110	–	–
Castor oil	5,948	5,438	6,778
Oiticica oil	448	246	204
Tung oil	2,217	2,860	2,142
Inedible tallow	5,247	8,680	8,007
Animal oils and fats	3,224	1,337	771
Grease(7)	29,877	23,589	15,308
Fish liver and visceral oil	1,039	105	261
Total Inedible Oils and Fats	48,131	43,545	33,594
Total Edible and Inedible Fats and Oils Production	455,160	459,520	449,606

Source: Based on DBS Data.

(1) Corn oil was listed with other oils until 1963 and separated starting in 1964.

(2) This class included corn oil, refined salad oils, etc. until 1963.

(3) Chemically modified oils, fats and waxes, Import Class #39—559, includes a large number of different materials, e.g. blown oils, dehydrated oils, sulphonated oils, hydrogenated soybean oil, etc. Value of imports has ranged from $1.4 to $2.3 million in recent years. Grouping this class with primarily edible oils rather than with primarily inedible oils may be unjustified.

Another class #39—599, listed as Mixtures and Derivatives of Oils, etc. includes fatty acids, degras, grease and other non-edible chemicals. In 1965, 9.9 million pounds worth $1.1 million were imported into Canada, more than 90 per cent of it originating in the United States. This class has not been included in the import table #2.

(4) Vegetable oil total includes the oil equivalent of imported soybeans.

(5) Edible tallow: no separate statistics available.

(6) Includes Icelandic herring oil and menhaden oil; and also whale oil from 1964 on.

(7) Grease, including wool grease and lanolin.

TABLE 3

Canadian Exports of Fats and Oils

(000 pounds)

	1963	1964	1965
Primarily Edible			
Vegetable Oils:			
Soybeans (oil equivalent)	17,280	20,400	32,200
Soybean oil	45,373	25,017	34,727
Rapeseed (oil equivalent)	116,400	68,200	199,500
Rapeseed oil	122	391	5
Sunflower seed (oil equivalent)	4,720	3,460	4,540
Margarine and shortening	121	104	168
Vegetable Oils and Fats	165	79	130
Total(1)	184,181	117,651	271,270
Animal Fats:			
Lard	23	34	31
Butter (oil equivalent)(2)	4,490	29,200	2,340
Total	4,513	29,234	2,371
Marine Oils:			
Herring oil	947	23,291	7,578
Whale oil	4,918	3,161	4,526
Total	5,865	26,452	12,104
Total Edible Fats and Oils (excluding oil equivalents of oil seeds)	194,559	173,337	285,745
Primarily Inedible			
Flaxseed (oil equivalent)	229,000	294,000	319,000
Linseed oil	8,039	18,996	22,518
Inedible tallow	108,233	137,872	135,564
Marine oils(3)	11,361	8,240	7,589
Animal Fats and oils	171	159	129
Total Inedible Fats and Oils (4)	356,804	459,267	484,800
Total Edible and Inedible Fats and Oils	551,363	632,604	770,545

Source: Based on DBS data.

(1) Edible vegetable oils total includes oil equivalents of oilseeds as well as oils extracted in Canada.

(2) Butter exports have been converted into butter oil equivalents at 80 per cent. The bulk of all butter exports went to the United Kingdom. Exports of 62 million pounds of butter oil in 1964 and 5 million pounds in 1965 — all government held surplus stock — have not been included.

(3) Exports of marine oils listed as inedible oils, include sun-rotted cod liver oil, fish and marine animal oil, fish liver and visceral oils. Some of these oils are probably of a feed grade.

(4) Inedible fats and oils total includes the oil equivalent of flaxseed exported as seed.

WORLD FATS AND OILS REVIEW

World Production of Oils and Fats Forecast at Record in 1966

"The following extract is taken from the January 31, 1966 issue of World Agricultural Production and Trade published by the foreign Agricultural Service, United States Department of Agriculture. "World production of oils and fats in 1966 is forecast at a record 36.8 million short tons, only marginally larger than the previous record of 1965 but almost one-fourth above the 1955-59 average. Most of the increase from 1965, forecast at about 235,000 tons, is expected to be in the edible oils.

The sizeable increase in soybean oil will dominate the entire production pattern. For the second successive year soybean oil production probably will displace butter as the largest single category of all fats and oils. Principal other increases will be in olive oil output and in production of tallow and greases. The major decline is foreseen in peanut oil production. The United States, as throughout the last decade, will continue to account for one-fourth or more of the total world production."

According to the January 1966 Foreign Agriculture Circular published by the United States Department of Agriculture . . .

"**World production of soybeans** reached an estimated record 1,187 million bushels in 1965. Most of the net gain from 1964 of 152 million bushels took place in the United States where the harvest reached an all-time high of almost 844 million bushels. Among minor producing countries, a sharp increase occurred in Brazil and is believed to have occurred in the Soviet Union. In contrast, the 1965 outturn in Mainland China was down slightly, according to indications. Moreover, the decline in China is believed to have been confined largely to the Northeast, the main area producing for export, where acreage was reduced by the long dry season.

Production of rapeseed in 1965 established a new record, one-fourth above that in 1964 and significantly above the previous record output of 1961. The gain was largely accounted for by marked increases in production in India, Canada, Poland, and France, supplemented by estimates of lesser increases in Mainland China, Chile, Sweden, and Czechoslovakia. Although relatively small in total, production both in Japan and Denmark is estimated to have declined from that of 1964.

Production prospects for 1966 are indeterminate. However, exports may reach a new high, reflecting some delay in marketings of the record 1965 Canadian crop, which in the August-October period were running only marginally above those of the corresponding period a year ago. Forward sales for export have exceeded farmer marketings, resulting in a significant rise in prices. Consequently, the bulk of the crop may not move into export channels until sometime later this year.

Prospects for 1966. World exports of oilseeds, oils, and fats in 1966 are expected to exceed those of last year and to approximate the record level of 1964, with movement from the United States again the predominating factor. The major gain from a year earlier will again be scored by the edible oils, but palm oils, industrial oils, and animal fats may expand somewhat. A further decline in world trade, for the fourth successive year, is foreseen in marine oils."

TABLE 4

Estimated World Production of Fats and Oils(1)

(oil or fat equivalent)
(000 short tons)

Commodity	Average 1955–59	1960	1961	1962	1963	1964(2)	1965(3)	Forecast 1966
Edible vegetable oils:(4)								
Cottonseed	2,081	2,280	2,305	2,430	2,500	2,580	2,675	2,675
Peanut	2,364	2,325	2,395	2,520	2,705	2,805	3,050	2,875
Soybean	3,024	3,815	3,660	4,020	4,195	4,270	4,500	4,880
Sunflowerseed	1,422	1,575	1,990	2,185	2,530	2,275	2,870	2,785
Rapeseed	1,209	1,280	1,320	1,295	1,200	1,250	1,575	1,475
Sesameseed	590	585	525	585	590	585	580	590
Safflowerseed	89	129	147	156	221	228	195	210
Olive oil	(1)1,091	1,300	1,480	1,475	1,035	1,865	1,075	1,245
Corn oil	170	195	210	225	240	245	265	270
Total	12,040	13,484	14,032	14,891	15,216	16,103	16,785	17,005
Palm oils:(5)								
Coconut	2,286	2,240	2,395	2,325	3,420	2,435	2,425	2,435
Palm kernel	447	440	440	405	410	415	410	415
Palm	1,394	1,455	1,410	1,365	1,390	1,400	1,405	1,410
Babassu kernel	51	66	70	75	77	80	85	80
Total	4,178	4,201	4,315	4,170	4,297	4,330	4,325	4,340
Industrial oils:(4)								
Linseed	1,138	1,075	1,115	1,080	1,155	1,190	1,155	1,200
Castorbean	235	295	265	290	325	400	345	345
Oiticica	9	22	18	28	6	27	25	25
Tung	128	136	120	108	100	123	128	110
Perilla	6	6	5	6	5	4	2	5
Total	1,516	1,534	1,523	1,512	1,591	1,744	1,655	1,685
Animal fats:								
Butter (fat content)	4,014	4,250	4,295	4,375	4,375	4,415	4,435	4,455
Lard(6)	3,727	4,000	4,045	4,085	4,065	3,845	3,900	3,800
Tallow and grease	3,243	3,440	3,640	3,645	4,040	4,390	4,225	4,350
Total	10,984	11,690	11,980	12,105	12,480	12,650	12,560	12,605

TABLE 4 (Concl.)

Estimated World Production of Fats and Oils(1)

(oil or fat equivalent)
(000 short tons)

Commodity	Average 1955–59	1960	1961	1962	1963	1964(2)	1965(3)	Forecast 1966
Marine oils								
Whale	427	418	428	390	295	249	205	145
Sperm whale	119	122	120	130	149	160	145	130
Fish (including liver)	428	511	669	742	682	789	845	845
Total	974	1,051	1,217	1,262	1,126	1,198	1,195	1,120
Estimated world total	29,692	31,960	33,067	33,940	34,710	36,025	36,520	36,755

(1) Years indicated are those in which the predominant share of the given oil or fat was produced from its related raw material.

(2) Preliminary.

(3) Estimated.

(4) Estimates of U.S. oil production include actual oil produced plus the oil equivalent of exported oilseeds; estimates for other countries are based upon the production of various oilseeds times the estimated normal proportions crushed for oil.

(5) Estimated on the basis of exports and information available on consumption in the various producing areas.

(6) Rendered lard only in most countries.

Source: USDA, January 1966.

TABLE 5

World Exports of Oilseeds, Oils and Fats (fat or oil equivalent):(1)

(Average 1955–59, Annual 1960–64, Estimate 1965 and Forecast 1966)
(thousand short tons)

Commodity	Average 1955–59	1960	1961	1962	1963	1964(2)	1965(3)	Forecast 1966
Edible Vegetable Oils;								
Cottonseed	332	308	282	313	295	413	375	350
Peanut	928	811	887	1,041	1,054	1,042	1,000	1,050
Soybean	1,049	1,595	1,203	1,668	1,603	1,904	1,980	2,240
Sunflower(4)	130	242	291	347	440	354	425	400
Rapeseed	96	94	82	159	137	140	225	250
Sesame	57	89	81	99	90	94	89	90
Safflower	14	38	27	46	84	81	65	65
Olive(5)	52(6)	76	94	96	31	104	70	65
Corn	3	10	12	15	9	4	5	5
Total	2,661	3,263	2,959	3,784	3,743	4,136	4,234	4,515
Palm Oils:								
Coconut	1,368	1,311	1,456	1,373	1,460	1,486	1,450	1,480
Palm Kernel	454	443	430	395	397	400	395	400
Palm	610	645	623	558	583	620	625	630
Babassu Kernel	3	–	–	10	1	–	–	–
Total	2,435	2,399	2,509	2,336	2,441	2,506	2,470	2,510
Industrial Oils:								
Linseed	502	468	500	492	464	468	495	520
Castor	149	174	184	178	205	214	220	215
Oiticica	8	10	13	21	7	14	15	15
Tung	71	59	44	42	41	47	44	44
Perilla	(7)	1	(7)	(7)	(7)	(7)	(7)	(7)
Total	730	712	741	733	717	743	774	794
Animal Fats:								
Butter (fat content)	467	470	490	465	520	562	525	545
Lard	388	449	362	350	415	484	350	300
Tallow and Grease	915	1,186	1,260	1,176	1,396	1,645	1,400	1,475
Total	1,770	2,105	2,112	1,991	2,331	2,691	2,275	2,320

TABLE 5 (Concl.)

World Exports of Oilseeds, Oils and Fats (fat or oil equivalent):(1)

(Average 1955–59, Annual 1960–64, Estimate 1965 and Forecast 1966)
(thousand short tons)

Commodity	Average 1955–59	1960	1961	1962	1963	1964(2)	1965(3)	Forecast 1966
Marine Oils:								
Whale.	427	418	428	390	295	249	205	145
Sperm Whale	119	122	120	130	149	160	145	130
Fish (including liver)(5) . .	160	245	295	386	405	417	450	440
Total	706	785	843	906	849	826	800	715
World Totals	8,302	9,264	9,164	9,750	10,081	10,902	10,553	10,854

(1) Exports from producing countries.

(2) Preliminary.

(3) Estimated.

(4) Includes exports of "edible vegetable oils" from the U.S.S.R. and Rumania, believed to be mainly sunflower-seed oil.

(5) Net exports.

(6) 1955–58 average.

(7) Less than 500 tons.

Source: U.S.D.A.

CANADIAN SITUATION

TABLE 6

Canadian Crushings of Vegetable Oilseeds and Production of Oil & Meal

(Calendar Year)

(Million Pounds)

	1961	1962	1963	1964	1965
Crushings					
Flaxseed	163	132	135	171	159
Soybeans	925	1,046	1,089	1,158	1,173
Other(1) (2)	68	78	86	108	150
Total	1,156	1,256	1,310	1,437	1,482
Oil Production					
Flaxseed	57	45	47	59	55
Soybeans	163	181	189	200	199
Other	23	29	33	41	58
Total	243	255	269	300	312
Oil Meal Production					
Flaxseed	101	81	83	107	98
Soybeans	723	815	855	917	933
Other	40	46	50	58	83
Total	864	942	988	1,082	1,114

(1) Includes rapeseed and sunflower seed.

(2) Some safflower seed was crushed until 1963.

Source: DBS, No 32-006

SOYBEANS, SOYBEAN OIL, SOYBEAN MEAL

Soybean Outlook

The Dominion Bureau of Statistics reported that intended Canadian soybean acreage will increase by 4 per cent to 275,000 acres in 1966 compared with 265,000 acres in 1965. On the basis of an average yield of 30 bushels per acre, the total crop would increase from 8,030,000 bushels to 8,250,000 bushels.

Soybean prices, f.o.b. Chatham, have followed United States soybean prices. They started at a high level of $3.24 per bushel in January 1965 and very gradually dropped to $2.64 in November. Since then, the general strenth of the market has raised the level to well above $3.00.

The new United States support price of $2.50 per bushel is expected to lend strength to the price paid for Canadian beans.

The 1965/66 United States supply of soybeans was placed at 873 million bushels compared with 769 million the previous year. The United States planting intentions for 1966 increased to 37.1 million acres from 35.4 million acres of actual plantings in 1965. The 1966/67 crop may reach the 900 million bushel mark.

If the present consumption trend continues, the United States soybean carryover will again be relatively low. By the end of March 316.4 million bushels had been crushed in the United States. Soybean exports from that country amounted to a total of 185 million bushels for the crop year 1965/66 to the end of April.

United States soybean oil exports totalled 468 million pounds during the six months period ending in March 1966 compared with 681 million pounds the previous crop year. Soybean meal exports for the same period amounted to 1,530,000 tons compared with 1,205,000 tons last year.

Demand for soybean oil and meal has remained strong in 1965/66. The expected decrease in cottonseed oil production in the United States of about 400 million pounds, combined with the larger requirements based on population growth, will provide a strong market for the 1966/67 soybean crop. This development should have a favorable effect on the prices paid for the Canadian crop, and improve the market potential for Canadian vegetable oils generally.

In 1965, Canadian soybean exports grew by 58 per cent to 3.0 million bushels (91,032 tons), and imports declined from 18.3 million bushels (548,331 tons) to 15.9 million bushels (476,262 tons). Soybean oil imports dropped by 4.5 million pounds to 29.9 million pounds in 1965, while exports rose from 25.0 million pounds in 1964 to 34.7 million pounds in 1965.

Canadian soybean meal imports rose in 1965 by more than 10 per cent to close to 500 million pounds, largely on account of increased imports to Quebec which offset the drop of the previous year. Imported United States soybean meal is consumed primarily in those areas of Canada where transportation costs render Canadian meal unattractive. The volume of these imports could drop if rapeseed meal could capture a major share of this market.

Exports of soybean meal also increased by more than 10 per cent to about 510 million pounds in 1965.

Last year's expansion of markets for Canadian soybean growers and crushers took place in the export rather than the domestic field. The continued strong international demand for soybean oil and meal should also in 1966/67 provide good markets for the somewhat larger crop expected in 1966.

TABLE 7

Canadian Imports of Soybeans

(tons)

Origin	1961	1962	1963	1964	1965
Hong Kong	14	7	4	5	7
United States	346,000	418,000	425,738	548,326	476,255
Total	346,014	418,007	425,742	548,331	476,262
Total value (thousand $)	30,261	37,340	41,094	52,899	46,327

Source: DBS, Trade of Canada.

Soybean imports declined by 13 per cent from 548,000 tons in 1964 to 476,000 tons in 1965. Canadian processors crushed over 580,000 tons of soybeans (Table 6) during the same period. Since inventories are not published, the exact quantity of Canadian soybeans crushed during this period can only be estimated to have been in the neighbourhood of 140,000 tons. Despite the decline in soybean imports, the crushing volume increased slightly over the previous years, with a utilization of crushing capacity well beyond 80 per cent. The oil yield for the year dropped from 17.55 per cent to 16.9 per cent presumably as a result of the wet crop conditions in 1965.

TABLE 8

Canadian Exports of Soybeans

(tons)

Destination	1961	1962	1963	1964	1965
United Kingdom	83,867	78,674	47,122	56,547	82,521
Denmark	–	–	–	–	3,699
West Germany	5,110	3,296	1,461	1,120	4,535
Sweden	–	–	–	1	33
Switzerland	83	–	88	33	45
Rep. of South Africa	–	–	–	–	198
United States	110	–	–	–	1
Netherlands	1,677	–	–	–	–
Australia	–	–	56	–	–
Total	90,847	81,970	48,727	57,702	91,032
Total Value (thousand $)	8,060	7,704	4,979	5,767	9,954

Source: DBS, Trade of Canada.

The United Kingdom, as principal customer for Canadian soybeans, increased her purchases in 1965 by 46 per cent over those of 1964, approaching the export level achieved in 1961. West Germany also increased her imports from Canada, and Denmark entered the field as a new customer.

TABLE 9

Canadian Soybean Prices(1)

(cents and eighths per bushel)

	1962–63	1963–64	1964–65	1965–66
August	242/5	275	276	283/6
September	248/2	281/6	298/2	272/7
October	252/1	297/1	303/6	273/4
November	255/1	295/3	312/7	264/1
December	256/4	292/1	318/3	283/3
January	269/1	288	324/1	298/5
February	276/1	276/4	328/6	302/7
March	275/1	275/3	322/1	
April	273	272	320/1	
May	276/6	267/3	302/5	
June	283/3	265/6	312/2	
July	281/7	266/7	304/3	
Yearly Average	265/7	279/3	310/4	

Source: DBS No. 22-001

(1)Buying prices, carlots, f.o.b. Chatham.

TABLE 10

Canadian Supply and Disposition of Soybean Oil

(thousand pounds, calendar year)

	1961	1962	1963	1964	1965
Stocks, starting	5,301	12,179	5,485	7,341	6,542
Production	162,876	181,258	186,750	200,318	198,588
Imports	21,100	19,302	29,613	34,505	29,946
Supply	189,277	212,739	221,848	242,164	235,076
Exports	30,028	50,625	45,373	25,017	34,727
Stocks, Dec. 31	12,179	5,485	7,341	6,542	6,330
Apparent Domestic Disappearance	147,070	156,629	169,134	210,605	194,019

Source: Based on DBS data.

In 1965 the domestic disappearance of soybean oil showed a decline of 16.5 million lbs., for the first time reversing the upward trend as shown since 1961. While an interpretation must be approached with care, it is worth noting that the domestic consumption of soybean oils in margarine and shortenings also declined by approximately 17 million pounds in 1965 (Table #62). At the same time, consumption of oils listed under "Other" in the same Table, which includes particularly rapeseed oil, increased from 38.7 million lbs. to 46.2 million lbs., i.e. by 7.5 million lbs.

Source of Beans Used in Producing Soybean Oil in Canada

The production of soybean oil is based primarily on imported beans. Canada grew about 8 million bushels of soybean in 1965 and exported 3 million bushels. At most, therefore, 5 million bushels of domestic beans were available to be used to produce about 51 million lbs. of oil. The remaining 148 million lbs. of oil produced by the crushing industry, therefore, was based on imported beans.

The export of soybean oil has generally not been a significant factor in the industry since the domestic market absorbs most of it. Competition from rapeseed oil may affect this pattern in future years.

TABLE 11

Canadian Imports of Soybean Oil

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United States	21,100	19,302	29,613	34,505	29,946
Total	21,100	19,302	29,613	34,505	29,946
Total Value (thousand $)	2,751	2,251	3,435	3,822	4,104

Source: DBS, Trade of Canada.

All soybean oil entering Canada is imported from the United States. The value has grown steadily and reached more than $4 million in 1965. A substantial part comes in duty-free for industrial applications.

TABLE 12

Canadian Exports of Soybean Oil

(thousand pounds)

Destination	1961	1962	1963	1964	1965
United Kingdom	29,950	44,961	45,372	25,016	33,278
Netherlands	–	–	–	–	1,447
Peru	–	–	1	1	2
Jamaica	3	–	–	–	–
Cuba	44	–	–	–	–
United States	31	60	–	–	–
Spain	–	5,605	–	–	–
Total	30,028	50,625	45,373	25,017	34,727
Total Value (thousand $)	3,848	5,260	4,969	3,047	4,704

Source: DBS, Trade of Canada.

The United Kingdom continues to be the major and virtually sole customer for Canadian soybean oil.

TABLE 13

Canadian Supply and Disposition of Soybean Meal

(tons)

	1961	1962	1963	1964	1965
Stocks, starting	9,236	6,629	11,441	10,058	19,282
Production	361,285	407,649	427,432	458,513	466,559
Imports	198,241	275,590	256,820	222,920	248,990
Supply	568,762	689,868	695,693	691,481	734,831
Exports	133,258	218,067	241,340	229,329	255,756
Stocks, Dec. 31	6,629	11,441	10,058	19,282	12,432
Apparent Domestic Disappearance	428,875	460,360	444,295	442,870	466,643

Source: Based on DBS data.

Domestic disappearance of soybean meal has registered only a small overall increase of less than 9 per cent over the past five years. On the other hand, production has risen during the same period by nearly 30 per cent, and exports by over 90 per cent.

Since 1962 the proportion of the total production of soybean meal which was exported remained in the neighbourhood of 50 per cent, being approximately 55 per cent in 1965.

TABLE 14

Imports of Soybean Meal by Province

	1963		1964		1965	
	(mil. lbs.)	(000$)	(mil. lbs.)	(000$)	(mil. lbs.)	(000$)
Nfld.	–	–	0.19	9	0.06	2
N.S.	4.76	210	0.32	14	0.35	14
P.E.I.	–	–	0.30	15	0.43	19
N.B.	1.72	69	1.87	72	1.74	73
Que.	166.16	6,605	116.44	4,520	160.37	6,568
Ont.	237.34	9,376	225.82	8,711	229.60	9,515
Man.	55.09	2,290	59.06	2,388	61.36	2,584
Sask.	0.98	42	0.75	32	1.28	58
Alta.	8.95	379	11.00	463	12.29	533
B.C.	38.65	1,640	30.08	1,220	30.50	1,350
TOTAL	513.64	20,609	445.84	17,442	497.98	20,716

Source: D.B.S.

TABLE 15

Canadian Exports of Soybean Oil Cake & Meal

(tons)

Destination	1961	1962	1963	1964	1965
United Kingdom	131,938	212,500	241,145	216,688	247,747
Australia	–	–	–	–	6,391
Barbados	–	60	60	90	60
Leew.-Wind. Is.	–	–	–	–	2
Trinidad	–	–	–	15	106
Cuba	900	5,275	–	12,493	1,255
United States	1	57	34	43	196
British Guiana	–	–	–	1	–
Venezuela	–	–	100	–	–
Ireland	392	168	–	–	–
New Zealand	8	4	–	–	–
Bermuda	19	2	–	–	–
Total	133,258	218,067	241,340	229,329	255,756
Total value (thousand $)	10,327	18,024	21,923	21,075	24,270

Source: DBS, Trade of Canada.

The value of soybean meal exports in 1965 reached a record high of $24.3 million. The British market continues to be the major outlet for the export of Canadian soybean meal, and a gain of 30,000 tons was recorded in 1965. Australia bought some meal for the first time, but this market may prove to be rather difficult for Canadian crushers.

The total exports of soybean meal in 1965 corresponded to 10.8 million bushels of soybeans. Approximately 4 – 5 million bushels of Canadian grown soybeans were available in 1965 to contribute between 96,000 to 120,000 tons of meal. At least 62,000 tons of this meal must have been shipped as part of the 247,747 tons exported to the United Kingdom, in order to qualify for preferential tariff treatment. The remaining 185,000 tons, corresponding to approximately 231,000 tons of soybeans, could have been derived from imported soybeans. In other words, about half of the soybeans imported from the United States were required for meal exports to the United Kingdom.

It is likely that, starting in 1967, the Dominion Bureau of Statistics will further divide the exports of soybean meal into the 44 per cent and 50 per cent protein varieties.

TABLE 16

Canadian Imports of Miscellaneous Oilseed Cake & Meals

(tons)

	1961	1962	1963	1964	1965
Cottonseed Meal	2,882	401	939	2,917	4,420
Oilseed Cake & Meal, N.E.S.	2,497	246	165	50	73
Total	5,379	647	1,104	2,967	4,493
Total value (thousand $)	322	56	90	235	358

Cottonseed meal imports continued their sharp increase by another 52 per cent in 1965 and were valued at $348,000. It is likely that most of this meal was used in Western Canada. Imports of other meals listed above have become insignificant in recent years.

TABLE 17

Canadian Exports of Miscellaneous Oilseed Cake & Meals

(tons)

	1961	1962	1963	1964	1965
	558	564	1,103	1,230	3,798
Total value (thousand $)	32	24	83	74	318

Exports of products of this class rose sharply in 1965. This can be mainly attributed to increased exports to the United Kingdom, although Japan and West Germany have also purchased smaller quantities of these products periodically. It is safe to assume that rapeseed meal accounts for the bulk of these exports. Small quantities of sunflower meal have, however, been exported in the past. The value of exports rose from $74,000 in 1964 to $318,000 in 1965.

RAPESEED, RAPESEED OIL, RAPESEED MEAL

The Rapeseed Supply Situation in 1966

World production rose sharply in 1965 to a total of 4,996,000 tons compared with a total of 3,958,000 tons the previous year. India, Canada and Poland registered the largest increases.

India	1,516,000 tons
Mainland China	800,000 tons
Canada	570,000 tons
Poland	425,000 tons
Pakistan	336,000 tons
France	330,000 tons
Others	1,019,000 tons
World Total	4,996,000 tons

Source: U.S.D.A.

Canadian production in 1966 will probably again reach the level of 1965 with a carryover of less than 3 million bushels expected for the 1965 crop. The new price support of $2.50 per bushel for soybeans in the United States should tend to keep up the prices for rapeseed products and favourably affect returns to Canadian rapeseed growers. World oil and seed production is not expected to meet the demand in 1966, and as a result the domestic crushings of rapeseed should further expand. This will partly depend on the continuation of the present crushing margin, the general efficiency of present Western Canadian crushers, and last but not least, on plans of Eastern Canadian soybean crushers to enter the rapeseed field.

"Oil World", Hamburg, estimates that the French rapeseed crop this year will reach the same level as in 1965. The Swedish crop may reach only two thirds of the 1965 volume of slightly more than 200,000 tons.

Canada maintained its first place as an exporter of rapeseed with 266,000 tons in 1965, out of a total estimated world export of approximately 580,000 tons. France occupied the second place, with an estimated 134,000 tons, and Sweden the third place with 80,000 tons.

Italy, Germany and Japan accounted for more than two-thirds of the total rapeseed imports in 1965.

Total world rapeseed oil exports in 1965 amounted to 59,000 tons, according to "Oil World" with the following countries being the major importers:

Algeria	15,400 tons
Netherlands	12,300 tons
West Germany	8,500 tons

"Oil World" anticipates that for the crop year 1966-67 net supplies of rapeseed available for export will be equal to the present volume of 980,000 tons. The demand should be excellent due to the limited availability of competing products, as well as the wider acceptance of rapeseed oil in Western Europe and the United Kingdom.

Rapeseed: 1966 Canadian Crop Prospects

Farmers intend to sow 1,368,000 acres of rapeseed in 1966, a decrease of 5 per cent from the record acreage of 1,435,000 planted in 1965, yet still 120 per cent higher than the 1960 – 1964 average of 622,700 acres.

According to the D.B.S., Crop Section Report, the intended acreage is distributed as follows:

	1966	1965 (actual)
Manitoba	150,000	145,000
Saskatchewan	538,000	555,000
Alberta	680,000	735,000
Total	1,368,000	1,435,000

Intended acreages, as reported in March of each year, if anything, have tended to be somewhat below actual plantings. The decrease in Alberta may be due to adverse weather which caused poor yields in the Peace River district last year. Farmers' returns from last year's crop have generally ranged around $2.00 to $2.40 per bushel. The high cash prices paid in early 1966 were not reflected at the farm level.

As for other Prairie crops, intended acreage for all classes of wheat has increased by 5 per cent to 29.6 million acres. The combined oats, barley and mixed grain acreage is expected to rise by 7 per cent to over 18 million acres. Prairie summer fallow, however, will decline by 6 per cent to 25.1 million acres. Another interesting survey projects a 26 per cent increase over 1965 in fertilizer consumption by Prairie farmers to reach 585,000 tons.

The excellent wheat market does not appear to have discouraged the growing of rapessed. Cultivation practices are improving, and weather permitting, a rapeseed crop equal to last year's can be expected.

Zero-Erucic Acid Rapeseed

The Saskatchewan Wheat Pool will contract for 650 acres of zero-erucic acid rapeseed to be grown in Saskatchewan this year. Small quantities of the oil and meal should be available in fall 1966. This new variety however will not be licenced for at least another year.

For further information inquiries should be directed to:

Saskatchewan Wheat Pool,
Vegetable Oil Division,
P.O. Box 109,
Saskatoon, Sask.

Rapeseed Quality of 1965 Crop as Reported by the Grain Research Laboratory, Winnipeg.

Average oil content of the 1965 rapeseed crop on a dry basis was 43.5 per cent compared with 43.8 per cent for the 1964 crop. Average bushel weight of the 1965 crop was 53.9 pounds. Frost damage and contamination with inseparable seeds were the main degrading factors. Late maturing Argentine-type rapeseed was particularly affected by frost and poor harvest conditions.

Protein content of the residual oil free meal for all grades was reported at 40.1 per cent, almost 2 per cent below the average of 42.0 per cent the year before, and the lowest level since 1956, the year the Grain Research Laboratory instituted its survey of the quality of new-crop rapeseed.

TABLE 18

Canadian Exports of Rapeseed

(tons, calendar year)

Destination	1961	1962	1963	1964	1965
United Kingdom	2,828	1,775	1,820	2,296	8,922
Belgium-Luxemburg	6,398	2,783	–	–	1,696
West Germany	13,916	14,783	241	232	22,646
Italy	38,264	90,407	19,223	3,265	48,126
Netherlands	18,342	31,284	2,772	9,342	22,429
Spain	–	–	–	1,003	152
Czechoslovakia	–	–	–	–	15,184
Poland	–	–	–	–	9,921
Pakistan	–	–	–	–	22,462
Japan	20,216	52,309	114,738	62,492	114,556
United States	247	701	382	3,133	119
Algeria	23,866	12,225	13,888	–	–
France	11,438	8,550	–	–	–
Taiwan	–	–	2,205	4,235	–
Finland	–	–	–	2,246	–
India	–	–	–	2,800	–
Total Weight (tons)	135,514	214,817	155,267	91,041	266,213
Total Weight (thousand bushels)	5,420	8,590	6,210	3,640	10,650
Total Value (thousand $)	13,850	20,667	16,053	10,152	30,900

Source: DBS, Foreign Trade

Exports for each calendar year include portions of crops of two seasons. Japan continues to be Canada's major customer for rapeseed. Italy's imports have increased again as compared with the two preceding years, and is now Canada's second largest customer. West Germany's share increased substantially and amounted to about the same volume as that of the Netherlands and Pakistan.

According to "Oil World", West Germany imported more than 37,000 tons of rapeseed from Canada in 1965, i.e. about one third of its total imports. It is possible that this includes rapeseed re-exported by another country, since it greatly exceeds the Canadian figure on exports to Germany.

The Board of Grain Commissioners reported that by April 27, 1966, farmers' marketings of the 1965 crop had reached 16.7 million bushels (10.6 million bushels the previous crop year); overseas clearances amounted to 10.4 million bushels, i.e. 261,000 tons, (7.0 million bushels the previous crop year), and 4.9 million bushels remained as visible supply in storage or in transit. It is not expected that the carry-over will be burdensome.

TABLE 19

Canadian Exports of Rapeseed Oil

(thousand pounds)

Destination	1961	1962	1963	1964	1965
United States	711	714	122	391	5
Total	711	714	122	391	5
Value (thousand $)	91	76	11	45	1

Source: DBS, Foreign Trade.

Exports of rapeseed oil to the United States are used for lubricating and in a few other minor industrial applications. The decline registered in 1965 could be due to competition from crambe oil, whose high erucic acid content renders it useful as a lubricant in the cold rolling of steel.

Efforts to Increase Rapeseed Meal Utilization

When the Dominion Bureau of Statistics announced that the 1965 rapeseed crop amounted to 22.8 million bushels, many sources warned of the difficulty of marketing this relatively huge crop and its products. If the proportion of the domestic crushing volume was to be maintained, up to 4 million bushels would have to be processed in Western Canada, yielding about 75 million pounds of rapeseed oil and about 60,000 tons of rapeseed meal.

The oil had become well accepted by manufacturers of margarine, shortening and salad and cooking oils. The quality of the oil of the 1965 crop turned out to be good and free of the green pigmentation and hydrogenation difficulties encountered the previous season.

Using past experience as a guide, it was obvious that the successful disposal of the meal would mainly control the continuity of the crushing operations in Western Canada. A host of objections, limitations, inexperience and other impediments had prevented the proper acceptance of rapeseed meal by the feed industry. As a result, the Canadian crushing industry asked the Department of Industry to assist it in overcoming these obstacles.

At the same time, a group of distinguished Canadian nutritionists and chemists published a monograph on "Rapeseed Meal for Livestock and Poultry" (Canada Department of Agriculture #A1257). This publication contained all the up-to-date information on the properties of rapeseed meal and its production processes

As a first step in a concerted effort to make the feed manufacturing industry aware of the latest developments in rapeseed utilization, the Department of Industry organized a one-day symposium in Saskatoon, Sask., in December, 1965. This symposium brought together the National Nutrition Committee of the Canadian Feed Manufacturers Association and most of the authors of the monograph on rapeseed meal, as well as representatives of the Canada Department of Agriculture, the National Research Council, and private organizations and individuals interested in the rapeseed industry.

Four points characterized this conference:

(1) that improved processing techniques in conjunction with valuable nutritional studies, based on numerous feeding tests with ruminants, swine and poultry had raised the quality of rapeseed meal to such a level that it could be considered a serious competitor to soybean meal;

(2) many proposals were made to carry on further research in such areas as improvement of metabolizable energy values, nutritional needs of specific types of livestock, uniformity of meal quality, etc.;

(3) legal restrictions on the utilization of rapeseed meal should be re-examined;

(4) a continuous supply of high quality meal at a competitive price was required.

The proceedings of the symposium have been published in English and French by the Food Products Branch of the Department of Industry and are available upon request.

In order to acquaint the feed industry with the information made available at the Saskatoon symposium, the Department of Industry in co-operation with the local divisions of the Canadian Feed Manufacturers Association subsequently sponsored technical meetings in Winnipeg, Vancouver and Montreal.

Another meeting was held with the rapeseed crushers to discuss ways and means of producing a uniform top-quality meal. The Board of Grain Commissioners of Canada gave most valuable assistance in this effort.

At the annual meeting of the Associate Committee on Animal Nutrition of the National Research Council, held in Edmonton in February, 1966, a list of research proposals in the rapeseed meal area was submitted by the Department for consideration. These proposals were largely based on suggestions made by the feed industry and by nutritionists from various universities. Efforts are now under way to find the means by which these proposals could be undertaken.

All sectors of the industry and particularly the academic nutritionists, urged the Canada Department of Agriculture to lift the restrictions on rapeseed meal in view of the new knowledge and improved quality. In April, 1966 – as reported elsewhere – the Department of Agriculture rescinded all these restrictions.

Whatever the detailed reasons may be, the state of the protein meal economy certainly played a significant role, and at the end of the winter 1965–66, the rapeseed crushing industry was no longer faced with a surplus of meal, but rather with a shortage.

In the fall of 1965 and again early in 1966, European rapeseed oil entered Canada in modest quantities. At the time of writing, the full implications of this new development cannot be fully assessed. However, all indications are that the situation will have only a temporary effect on the steady growth of the Canadian rapeseed industry.

MEMORANDUM TO THE TRADE

by Mr. C.L. Stevenson,
Chief, Feed, Fertilizer & Pesticide Section, Plant Products Division
Canada Department of Agriculture

Re: Rapeseed Meal – Cancellation of Memorandum 1958 and Amendment of 1959

When rapeseed meal was going through the introductory stage of use in livestock feeds, an administrative ruling under the Feeds Act was issued by the Plant Products Division of the Canada Department of Agriculture on May 5, 1958 and amended, June 1, 1959. This ruling which placed limitations on the use of rapeseed meal in livestock feeds is now **rescinded.** In the registration of feeds under the Feeds Act, registrants will not now be required to show the amount of rapeseed meal on the application for registration.

While rapeseed meal must be used with some discretion in livestock feeds, especially sow feeds, it is not unlike a number of other feed ingredients that must also be used with some discretion. Recent studies in Canada on the utility and safety of rapeseed meal have satisfactorily established that this meal can be effectively and safely used in accordance with good feed formulating practices.

"Solvent Extracted Rapeseed Meal" dominates Canadian supplies, and evidence indicates it to be superior in feeding properties to "Expeller Rapeseed Meal". A recommendation is being prepared to revise the Feeds Regulations to require that the process of manufacture be shown as a part of the product name.

A summary of the nutritional uses of rapeseed meal has been compiled in a book entitled "Rapeseed Meal for Livestock & Poultry – A Review" and copies may be obtained at a price of $2.00 from Queen's Printer and Controller of Stationery, Ottawa, Canada. Catalogue No. is – A53–1257. It may also be obtained from a Canadian Government Bookshop in Ottawa, Toronto, Montreal, Winnipeg or Vancouver.

Special Survey of Rapeseed Producers

Mr. D. Durksen of the Manitoba Department of Agriculture and Conservation presented a summary of a Special Survey of Rapeseed Producers in Manitoba, Saskatchewan and Alberta at the Barley and Oilseeds Conference in Winnipeg on February 18, 1966. Through the co-operation of a number of grain companies and pools, 300 questionnaires were distributed, one to each of the more successful growers in each area, and 208 replies were used to form the summary.

On the basis of the comments, Mr. Durksen concluded that:

" – marketing and prices appear to be major problems;
- at a price of $2.00 or more per bushel, rapeseed compares favourably with wheat in returns per acre;
- many growers find rape a useful crop to control wild oats;
- price fluctuations have influenced farmers to suggest that rapeseed should be handled by the Wheat Board."

Replies have been arranged by province, and generally the trends of the farmers' attitudes were similar in these areas.

1. The major reasons advanced for growing rapeseed were:
   (a) it is a cash crop;
   (b) returns per acre are comparable to wheat;
   (c) rapeseed can be seeded fairly late in the spring.
2. Main problems in growing rapeseed:
   (a) Weed control and insects;
   (b) Uncertainty of market.
3. Between 13 per cent and 34 per cent of the farmers did not fertilize the rapeseed crop.
4. Most farmers seed at a rate of 6–10 lbs per acre.
5. An overwhelming majority reported that rapeseed can be harvested with the same effort or more easily than grain crops.
6. Frost and immature seed were listed as major reasons when seed was graded lower than No. 1.
7. Quota restriction, slow quotas, as well as uncertainty in prices were mentioned by farmers as the main concern in connection with marketing.
8. While the largest proportion of the farmers seemed to prefer to market rapeseed as soon after the harvest as possible, there was no unanimity concerning the remainder of the year.
9. The following order of importance was attached to some problems requiring more research:
   (a) Herbicides
   (b) Higher yields
   (c) Markets
   (d) Shatter resistance.

The majority of farmers favoured a one cent per bushel contribution for production and marketing research.

TABLE 20

Preliminary Estimate of High Protein Feed Supplies Available in Canada in 1965 with Comparative Figures for 1963 and 1964

Item	1963 (Revised)	1964 (Preliminary)	1965 (Preliminary)
		(thousand tons)	
Linseed oil meal	29	38	25
Soybean oil meal	443	452	455
Rapeseed oil meal	23	25	36
Other oil meals, gluten feed (1)	56	60	61(2)
Brewers' and distillers' dried grains and malt sprouts	109	109(2)	109(2)
Total Vegetable Protein	660	684	686
Fishmeal	38	26(2)	44(2)
Packing-house by-products (3)	137	140(2)	163(2)
Skim milk, buttermilk and whey powders	19	19(2)	19(2)
Total Animal Protein	194	185	226
Total Protein Supplies	854	869	912

(1) Other oil meals include sunflower, cotton seed, safflower seed and n.o.p.

(2) Estimated.

(3) Meat meal, meat scrap, tankage, blood meal, bone meal, etc.

SOURCE: DBS, Coarse Grain Quarterly, Feb., 1966.

Total estimated supplies of high protein feeds available to Canadian feeders in 1965 were placed at 911,800 tons. This amount, based on preliminary data, represented an increase of 5 per cent over the 1964 total of 868,700 tons and exceeded the 1963 figure of 853,800 tons by 7 per cent. Protein feed supplies of vegetable origin were estimated at 685,600 tons and accounted for 75 per cent of the total protein feed supplies in 1965 compared with 79 per cent in 1964 and 77 per cent in 1963. Available supplies of high protein feeds derived from animal sources were placed at 226,200 tons, some 23 per cent above the previous year's total of 184,300 tons and 16 per cent greater than the 1963 level of 194,200 tons.

CANADIAN TRADE IN EDIBLE OILSEEDS, FATS AND OILS

TABLE 21

Canadian Exports of Sunflower Seed

(tons)

Destination	1961	1962	1963	1964	1965
United Kingdom	–	–	–	3	1,239
Belgium-Luxemburg	–	–	–	52	26
Denmark	–	–	–	28	22
West Germany	–	–	777	1,089	1,697
Netherlands	–	–	943	1,674	792
United States	5,092	7,025	5,424	2,397	3,101
Sweden	–	–	–	(1)	–
Rep. of South Africa	–	–	(1)	–	–
Trinidad	–	3	–	–	–
Total	5,092	7,028	7,144	5,242	6,877
Total Value (thousand $)	706	1,202	1,178	790	946

Source: DBS, Trade of Canada.
(1) Less than one ton.

Of the total exports of 6,877 tons in 1965, 3,505 tons were exported during the last 5 months, valued at $535,000. Most of this was new crop seed, and probably all of the bird seed and confectionary varieties.

Frost damage severely reduced the yield of the 1965 crop, leading to a shortage of sunflower seed oil in the small established market. A modest volume of sunflower seed oil has been imported during the past crop year. The expected sunflower acreage in 1966 may be similar to that in 1965, and crushings will be included with those of rapeseed in the official reports.

TABLE 22

Canadian Exports of Mustard Seed

Year	Quantity (tons)	Value (thousand $)
1961	14,235	1,775
1962	13,381	1,740
1963	23,036	2,725
1964	26,377	2,926
1965	36,939	4,656

Source: DBS, Trade of Canada.

The increase in exports in 1965 reflects the tripling of the crop in 1965 to 75,000 from 24,000 tons the previous year. The United States, Japan and Belgium are the major customers. The Netherlands and the United Kingdom also purchase substantial quantities. No mustard seed is crushed in Canada and, therefore, no oil is produced.

TABLE 23

Canadian Imports of Cocoa Butter

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United Kingdom	4,393	3,875	2,713	2,541	2,070
West Germany	36	–	47	11	28
Italy	375	285	882	143	–
Netherlands	756	1,465	1,313	2,616	1,196
Poland	–	–	–	42	–
China, Communist	–	–	–	–	45
Ghana	45	3,702	4,279	7,531	9,724
Jamaica	910	190	701	146	56
Trinidad	100	70	98	100	50
United States	186	200	298	29	16
France	11	–	–	–	–
Ireland	90	–	–	–	–
Brazil	2,399	3,080	1,066	–	–
Ecuador	15	11	–	–	–
Venezuela	11	22	–	–	–
Dominican Republic	190	–	111	–	–
Spain	–	–	33	–	–
French Equatorial Africa	–	22	–	–	–
Cameroons	–	–	220	–	–
Costa Rica	–	14	5	–	–
Total	9,517	12,935	11,766	13,157	13,185
Total value (thousand $)	5,171	7,188	7,268	7,388	6,658
Average price, ¢/lb.	54.4	55.5	61.8	56.1	50.6

Source: DBS, Trade of Canada.

No data are published on cocoa butter production from beans imported into Canada. Consequently, it is possible to present but a partial picture of the significant role played by cocoa butter in the fats and oils market. An analysis of the production or consumption of cocoa butter substitutes is also not available.

Average prices for cocoa butter for the last five years ranged from a high of 61.8¢ per pound in 1963 to a low of 50.6¢ per pound in 1965. There is no simple relationship between price and volume of imports. However, imports have show a slight tendency to increase over the past few years. Total value of imports ranged from $5.2 million in 1961 to $6.7 million in 1965.

Ghana has succeeded in increasing its exports of cocoa butter to Canada from 45,000 pounds in 1961 to 9.7 million pounds in 1965, representing nearly 74 per cent of total Canadian imports. The imports from the United Kingdom have contracted by more than one-half, and those from the Netherlands have also tended to decrease during the same period. Brazil has ceased to be a supplier.

TABLE 24

Canadian Imports of Coconut Oil

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United Kingdom	155	5	1	9,077	354
West Germany	2	4	6	7	7
Ceylon	54,533	34,422	25,796	22,464	18,257
Malaysia	2,357	16,851	9,576	4,707	14,124
Ireland	20	4	–	–	–
Netherlands	4	–	–	–	–
Philippines	–	1,792	–	1,968	2,386
United States	928	1,325	2,432	1,528	2,931
Fiji	–	–	34	–	57
Australia	–	–	–	–	1,502
Total	57,999	54,402	37,845	39,750	39,618
Total value (thousand$)	5,781	5,590	4,343	5,329	6,122
Average price, ¢/lb.	10.0	10.3	11.5	13.4	15.5

Source: DBS, Trade of Canada.

Imports of coconut oil have remained at the same level for the past three years, but the price has shown a steady increase. Lack of adequate supply and a higher price have lowered the import of Ceylonese oil and replaced it with coconut oil of Malayan and also to a lesser extent, with oil of Philippine origin.

In 1961, the value of coconut oil imports was $5.8 million and despite a decrease in volume of about 18 million pounds, the value of imports was $6.1 million in 1965.

Regarding the utilization of coconut oil, insufficient information is available, as shown in the follow-in breakdown.

TABLE 25

Utilization of Refined Coconut Oil

(million pounds)

Year	Refined Coconut Oil(1)	Margarine	Shortening	Total
1961	15.5	13.5	3.4	32.4
1962	20.1	13.4	2.2	35.7
1963	16.9	3.5	2.3	22.7
1964	14.5	0.8	2.7	18.0
1965	14.8	0.3	2.6	17.7

Source: Based on DBS data.

(1) Dominion Bureau of Statistics monthly publication 32–006 listed coconut oil under "Refined Oils". Little if any of this is used today as a margarine or shortening ingredient. Some of this refined coconut oil may be sold for inedible purposes.

It seems clear that less than half of all coconut oil is consumed as food. It has virtually disappeared as an ingredient of margarine.

TABLE 26

Canadian Imports of Corn Oil

(thousand pounds)

Country of Origin	1964	1965
United Kingdom	898	1,598
Netherlands	1,102	–
United States	15,067	12,779
Total	17,067	14,377
Total value (thousand $)......................	2,068	2,341

Source: DBS, Trade of Canada.

Prior to 1964 import statistics for corn oil were combined with a variety of other vegetable oils, which did not permit separate breakdown. Most of the 1964 corn oil imports with a total value of $2.1 million came from the United States at an average price of 12.1¢ per pound. In 1965 the total value amounted to $2.3 million at an average price of 16.3¢.

It should be noted that in addition to imported corn oil, two plants in Eastern Canada regularly extract substantial quantities of corn oil from domestically grown and imported corn. The Statistics Act does not permit the disclosure of the quantities because of the limited number of firms involved.

TABLE 27

Canadian Imports of Cottonseed Oil

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United States	40,911	27,080	33,668	37,422	47,646
United Kingdom	658	4,232	4,860	–	–
Argentina	–	1,971	–	–	–
Total	41,569	33,283	38,528	37,422	47,646
Total value (thousand $)	5,430	4,193	4,494	4,247	6,102
Average price per pound (¢)	13.0	12.6	11.7	11.3	12.8

Source DBS, Trade of Canada.

Practically all cottonseed oil imports come from the United States, with the United Kingdom and Argentina supplying small quantities in some years.

The following quantities of refined cottonseed oil have been used in margarine and shortening production:

1961	18.1	million	pounds
1962	10.6	"	"
1963	10.1	"	"
1964	12.8	"	"
1965	15.7	"	"

These values indicate that only 1/3 to less than 1/2 of all imported cottonseed oil is used for these purposes. It would appear, therefore, that the remainder must have been used as salad and cooking oil. Indications point to a considerable drop in the available supply of United States cottonseed oil this year. The prices have risen to levels up to 3¢ above soybean oil early in 1966, so that a reduction in consumption can be expected.

TABLE 28

Canadian Imports of Olive Oil

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
France	42	52	108	94	159
Greece	111	526	124	247	410
Italy	1,931	1,277	466	1,012	653
Portugal	122	169	91	240	163
Spain	1,586	1,291	870	1,869	1,093
Israel	–	1	–	1	1
Turkey	–	11	–	11	10
Tunisia	95	26	–	48	–
United States	149	181	152	183	244
Cyprus	–	–	99	–	–
Total	4,036	3,534	1,912	3,705	2,731
Total value (thousand $)	1,120	1,112	745	1,191	1,008
Average price, ¢/lb.	27.8	31.4	39.1	32.2	36.7

Source: DBS, Trade of Canada.

The volume of olive oil imports has been subject to considerable fluctuations. The total value of imported olive oil has, however, been relatively stable at $1.0 to $1.2 million per year, with a low of $745,000 in 1963.

TABLE 29

Canadian Imports of Palm Oil[1]

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
Malaysia	45,551	28,636	25,162	13,112	18,913
United Kingdom	3,924	–	22	–	–
Netherlands	4	–	–	–	–
Nigeria	2,611	–	–	–	–
Congo	91	48	–	–	–
United States	145	2,432	299	–	–
Total	52,326	31,116	25,483	13,112	18,913
Total value (thousand $)	5,205	2,958	2,477	1,393	2,180
Average price per pound(¢)	–	9.5	9.7	10.6	11.5

(1)Includes palm kernel oil until 1961

Source: DBS, Trade of Canada.

Palm oil used in Canada is now of Malayan origin. In 1961 palm and palm kernel oil imports combined amounted to $5.2 million, but palm oil alone in 1962 and 1963 accounted for only $3.0 and $2.5 million respectively. This value dropped to $1.4 million in 1964, and rose to $2.2 million in 1965. Increase in prices and high refining losses have affected its competitive position.

Combined usage in margarine and shortening (refined basis):

1963	19.1 million lbs.		
1964	15.5	”	”
1965	15.8	”	”

Figures on other industrial applications are not available.

Malayan palm oil production increased by more than 20 per cent in 1965 to 164,000 tons. Nigerian production also increased in 1965, while world supply as a whole remained at the level of the previous year.

TABLE 30

Canadian Imports of Palm Kernel Oil

(thousand pounds)

Country of Origin	1961(1)	1962	1963	1964	1965
United Kingdom	–	4,979	7,972	6,097	8,466
Netherlands	–	65	78	409	221
Nigeria	–	–	–	821	–
United States	–	–	30	–	121
Ireland	–	6	–	–	–
Congo, Leopoldville	–	–	–	–	1,068
Total	–	5,050	8,080	7,327	9,877
Total value (thousand $)	–	587	1,092	1,053	1,656
Average price, ¢/lb.	–	11.7	13.5	14.4	16.8

(1)Included with Palm Oil until 1961

Source: DBS, Trade of Canada.

The average price for palm kernel oil has risen steadily for the past 4 years from 11.7¢ in 1962 to 16.8¢ per pound in 1965. The bulk of Canada's palm kernel oil is imported from the United Kingdom, which, in turn, crushes mainly Nigerian and to a lesser extent palm kernels from Sierra Leone. Nigeria, like other African nations, is developing a domestic crushing industry, which may be reflected in the increase of direct imports from Nigeria in the future. The total value of palm kernel oil used in Canada rose from nearly $600,000 to $1.1 million in 1964 and $1.7 million in 1965.

TABLE 31

Canadian Imports of Peanut Oil

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United Kingdom	6,654	6,118	2,524	135	5
France	5	27	56	57	56
Nigeria	–	10,818	11,874	7,271	5,205
Hong Kong	127	115	136	128	129
United States	550	302	2,644	2,056	3,852
South Africa	2,034	1,423	1,347	–	–
Total	9,371	18,803	18,580	9,647	9,247
Total value (thousand $)	1,456	2,629	2,403	1,213	1,421
Average price per pound (¢)	15.5	14.0	12.9	12.6	15.4

Source: DBS, Trade of Canada.

Peanut oil imports have declined again in 1965 after a rise to between 18 and 19 million pounds in 1962 and 1963. The same applies to the total value which rose from $1.5 million in 1961 to $2.6 million in 1962 but dropped to $1.2 million in 1964 and $1.4 million in 1965.

Most of the peanut oil used in Canada comes from Nigeria and the United States. Both countries are expected to equal or even to exceed last year's production. Total world production, too, may be somewhat above the previous year's level in 1966, although rain has reduced crop estimates in Argentina, and India continues to restrict its peanut oil exports. Prices for peanut oil reached a low in April and proved most attractive in competition with other oils. If present trends continue, a moderate increase in Canadian consumption of peanut oil may be expected.

TABLE 32

Canadian Imports of Vegetable Oils and Fats

(thousand pounds)

Country of Origin	1961(1)	1962(1)	1963	1964	1965
United Kingdom	9,337	6,069	6,308	224	164
Austria	–	4	14	3	14
Belgium – Luxemburg	–	556	449	–	–
West Germany	33	2	616	2,209	3,286
Netherlands	22	2,753	10,653	668	24
Sweden	1,600	86	342	41	2,808
Republic of South Africa	953	1,132	700	–	–
Hong Kong	14	21	13	16	14
India	–	1	–	–	–
Japan	4	6	8	6	7
Colombia	–	102	–	–	–
United States	5,317	5,111	7,956	2,074	1,154
Denmark	–	–	11	16	15
France	–	–	1,358	–	1
Total	17,278	15,852	28,429	5,256	7,488
Total value (thousand $)	2,977	2,945	3,954	755	1,064

Source: DBS, Trade of Canada.

(1) Until 1963 this class #1620 was listed as Vegetable Oils, Crude and Refined, and included mainly salad oils, corn oil, cocoa butter substitutes, and also any sunflower oil, rapeseed oil, safflower oil, etc. imported into Canada. Imports in 1963 were valued at $3,954,000. In 1964 this class was changed to the present class #393–99, while at the same time two new classes were separated and established:

#393–20 – corn oil
#393–85 – Vegetable cooking fats and packaged salad oils.

In 1964 imports in the new class #393–99 dropped to $755,000. However, the two new classes showed a total value of $3 million. Therefore, the combined imports of these commodities remained at the same level. The value in class #393–99 rose again to $1.1 million in 1965, accompanied by a 2.2 million pound rise. Germany and Sweden accounted for the increase, probably mainly made up of rapeseed oil.

TABLE 33

Canadian Exports of Vegetable Oils and Fats(1)

(thousand pounds)

Destination	1961	1962	1963	1964	1965
United Kingdom	104	100	442	–	–
France	81	387	392	–	–
Netherlands	622	–	–	–	–
Republic of South Africa	(2)	–	(2)	1	–
Japan	156	77	147	16	–
Bahamas	2	–	–	–	–
Jamaica	2	2	–	(2)	39
Leew. Wind. Is.	1	1	–	3	9
Cuba	18	–	–	–	3
Neth. Ant.	(2)	–	–	–	–
United States	371	528	–	384	512
Guatemela	–	–	1	–	–
Nicaragua	–	2	21	–	–
Syria	–	–	5	–	–
Cyprus	–	–	–	–	1
Australia	–	–	–	–	23
British Guiana	–	2	6	6	40
Bermuda	–	1	1	3	40
British Honduras	–	–	–	–	2
Bardados	–	–	6	36	34
Trinidad	–	–	2	4	13
Germany	–	–	36	9	–
Colombia	–	1,543	–	–	–
Total	1,360	2,642	2,283	458	677
Total Value (thousand $)	172	335	165	79	130

Source: DBS, Trade of Canada.

(1) This export class #39–399 includes sunflower oil, salad and cooking oil and certain specialty fats like pan greases.

(2) Less than one thousand pounds

FLAXSEED, LINSEED OIL, LINSEED MEAL

Flaxseed: 1966 Canadian Crop Prospects

Prospective flaxseed acreage at 2.1 million acres this year is 5 per cent below that of 1965, but 10 per cent larger than the 1960-1964 average of 1.9 million acres. Nearly all of the crop is grown in the Prairie Provinces. DBS forecasts the following distribution:

	1966	1965 (seeded)
Quebec	26,300	28,000
Ontario	21,000	24,000
Manitoba	1,050,000	1,160,000
Saskatchewan	600,000	610,000
Alberta	430,000	414,000
B.C.	3,000	3,000
Total	2,130,300	2,239,000

Last year's carryover rose by 9 per cent to 7.1 million bushels. A record crop of close to 28 million bushels (12.5 bushels per acre) contributed to the gradual decline in prices. There is no sign of an increasing market in Canada, and present export trends indicate an even larger carryover than last year. Another near-record crop can be expected in 1966. By March 23, 1966, 16.5 million bushels of the 1965 crop had been marketed by farmers. Overseas export clearances amounted to 11.8 million bushels compared with 9.0 million bushels a year ago. Total visible supply of Canadian flaxseed at the same date was reported at 9.4 million bushels compared with 8.9 million bushels a year ago. Adding the flaxseed estimated to be on farms, the total available supply was approximately 20 million bushels at the end of March 1966.

International Flaxseed Outlook

Planting intentions in the United States are estimated at 2.85 million acres, and the U.S.D.A. predicts a drop in yield of more than 10 per cent from last year's crop of 35.2 million bushels to 31.4 million bushels.

According to the Trade Commissioner Service, Department of Trade and Commerce, untimely rains have reduced the Argentine crop expectations to 23.2 million bushels, 27.6 per cent less than last year. The first crop forecast had indicated a crop of 27.6 million bushels.

At the end of February 1966 flaxseed was quoted at Buenos Aires at $2.15 per bushel. The Argentine government has fixed the support price for oil at 25.50 pesos per kilo (15¢), the same as during the past two seasons. This is designed to make the sale of oil easier for the crushers. In March 1966 Argentine linseed oil was sold c.i.f. European ports about $16 per ton below the 1965 average.

Argentine linseed expeller meal was being sold in January for as high as 17,500 pesos per metric ton ($2.54 per bushel) and exporters, in turn, were selling c.i.f. the European Continent at U.S. $120.00 per metric ton ($3.28 per bushel).

Canada, the United States and Argentina accounted for more than 60 per cent of the total world flaxseed production, and for the bulk of world exports. Since new Argentine and United States supplies will be substantially reduced in 1966, it appears likely that world market demand will draw relatively more on Canadian stocks in the future.

Table 34 indicates that domestic crushing volume for the period August–January 1965/66 is slightly below last year's level. Meal exports have been maintained, while oil exports, especially to Britain, have declined substantially in the second half of 1965. Exports of seed are running well ahead of last year's shipments, but not sufficiently to prevent a sizable increase in carryover.

As shown in Table 36, the Federal Republic of Germany and the Netherlands account for the current increase in flaxseed exports.

Table 38 has been calculated as an aid to establish a total Canadian oil and meal supply and disposition pattern on a calendar year basis.

Linseed oil exports in 1965 increased to $2.6 million. Domestic consumption, however, dropped by 30 per cent in 1965 to is lowest level in five years. Flaxseed meal exports in 1965 were valued at $1.9 million, showing a substantial increase over previous years.

TABLE 34

Canadian Flaxseed: Supplies, Distribution and Prices, 1958–1966

(Crop Year Aug. 1 – July 31)
(Thousand Bushels)

	Average 1958–62	1962–63	1963–64	1964–65	Aug–Jan 1964–65	Aug–Jan 1965–66
Stocks at Aug 1	5,969	5,269	3,988	6,551	6,551	7,141
Production	18,525	16,042	21,116	20,313	20,313	27,954
Imports	45	1	65	6	–	–
Total Supply	24,539	21,312	25,169	26,870	26,864	35,095
Exports	12,985	12,566	13,638	14,346	7,650	9,580
Stocks at July 31	5,637	3,988	6,551	7,141	–	–
Domestic Disappearance	5,917	4,758	4,980	5,383	–	–
Domestic Crushing	–	2,529	2,750	2,901	1,621	1,582
Linseed Oil			(Thousand Pounds)			
Domestic Production	–	49,105	53,173	55,742	31,012	30,634
Exports	–	8,283	11,754	26,445	10,718(1)	6,791(1)
Linseed Meal			(Tons)			
Domestic Production	–	43,140	47,775	50,882	28,627	26,765
Exports	–	13,385	11,400	23,357	11,478(1)	11,376(1)
			(Dollars per Bushel)			
Average Farm Price (all grades)	2.96	3.06	2.91	2.94	–	–

(1) August – December only
Based on DBS data

Quality of Western Canadian Flaxseed, 1965 Crop

TABLE 35

Average Quality Data for Grades of Flax for Western Canada

Grade	Oil Content(1)		Iodine Value		Protein Content (2)		Number of Samples
	Mean %	Range %	Mean Wijs' Units	Range Wijs' Units	Mean %	Range %	
No. 1 C.W.	42.7	38.5–46.3	187	174–200	42.0	33.9–50.2	304
No. 2 C.W.	43.1	39.5–45.4	190	181–202	41.7	33.5–48.4	89
No. 3 C.W.	42.0	36.5–45.1	191	184–200	41.1	35.4–47.2	18
All Grades	42.8	36.5–46.3	188	174–202	41.9	33.5–50.2	411

(1) Moisture-free basis

(2) Oil-free Meal. Moisture-free basis.

Source: Crop Bulletin No. 96, Board of Grain Commissioners for Canada.

Western Canada's flax crop was in 1965 of better than average overall quality. Average values, with 1964 figures in brackets were as follows:

oil content 42.8% (41.6%)
iodine value 188 (186)
protein content 41.9% (42.1%)

Oil content of ten previous flax crops averaged 41.6 per cent. More than 50 per cent of the crop came from Manitoba, and its average oil content of 43.2 per cent was almost 1 per cent higher than in flax from Saskatchewan and Alberta.

TABLE 36

Exports of Canadian Flaxseed(1) 1963-64, 1964-65, 1965-66

(Thousand Bushels)

Destination	August – July 1963-64	August – July 1964-65	August – January 1964-65	August – January 1965-66
Western Europe				
EEC				
Belgium & Luxemburg	334	462	102	124
France	681	346	176	245(2)
Germany, Fed. Republic	864	903	269	1,297
Italy	–	38	19	220
Netherlands	1,476	2,039	985	1,897(2)
Sub-Total	3,355	3,790	1,552	3,782
Other Western Europe				
Britain	4,545	4,776	2,917	2,862
Finland	177	–	–	–
Greece	93	–	–	4
Ireland	–	24	24	147
Norway	248	259	124	220
Portugal	215	190	107	–
Spain	490	454	246	172
Sub-Total	5,768	5,703	3,418	3,404
TOTAL	9,123	9,493	4,970	7,186
Eastern Europe	561	651	241	256
Asia				
Israel	124	128	41	77
Japan	3,830	4,051	2,399	2,003
Korea	–	24	–	58
Sub-Total	3,954	4,203	2,440	2,138
TOTALS ALL COUNTRIES	13,638	14,346	7,650	9,580

(1) Overseas clearances as reported by the Statistics Branch, Board of Grain Commissioners for Canada subject to revision.

(2) Customs exports

TABLE 37

Canadian Flaxseed Prices(1)

(cents and eighths per bushel)

Crop Year	1962–63	1963–64	1964–65	1965–66
August	368	319/3	331/1	307/2
September	359/6	321/1	324/4	314/1
October	338	318/3	318/4	306/3
November	324/1	316	315/2	293/3
December	320/7	316/1	314/1	292/5
January	324/3	322/4	315	299
February	327/4	322/4	323/1	303/3
March	331/4	323/2	324/7	
April	331/3	316/2	321/6	
May	334/1	314	324/5	
June	329	318/2	319/2	
July	331	328	312/3	
Yearly Average	335	319/6	320/3	

Source: DBS No. 22-001

(1)Winnipeg Grain Exchange No. 1 C.W. Flaxseed, basis Fort William-Port Arthur.

TABLE 38

Canada: Supply and Disposition of Flaxseed Oil and Meal

(Calendar Year)

	1961	1962	1963	1964	1965
			(Thousand Pounds)		
Flaxseed Oil					
Stocks, Jan 1 (1)	10,822	10,174	9,754	8,685	7,624
Domestic production	57,136	45,377	46,733	58,935	54,858
Supply	67,958	55,551	56,487	67,620	62,482
Exports	19,800	4,445	8,039	18,996	22,518
Stocks, Dec. 31	10,174	9,754	8,685	7,624	11,552
Domestic Disappearance	37,984	41,352	39,763	41,000	28,412
Flaxseed Meal					
			(Tons)		
Stocks, Jan 1.	4,679	3,499	1,276	432	5,135
Domestic production	50,593	40,670	41,343	53,556	48,754
Supply	55,272	44,169	42,619	53,988	53,889
Exports	16,047	12,742	12,376	15,146	23,255
Stocks, Dec. 31(1)	3,499	1,276	432	5,135	1,672
Domestic Disappearance	36,726	30,151	39,811	33,707	28,962

Source: Based on DBS data, Crop Section

(1) Stocks held by crushing plants

TABLE 39

Canadian Exports of Linseed Oil

(thousand pounds)

Destination	1961	1962	1963	1964	1965
United Kingdom	19,487	4,364	7,966	17,998	20,180
Syria	–	12	–	9	–
Nigeria	–	–	–	10	–
Peru	–	4	2	6	–
Venezuela	21	12	50	66	4
Bermuda	2	3	2	6	–
British Honduras	1	–	–	1	–
Barbados	27	16	14	13	12
Jamaica	79	–	–	1	–
Leew. Wind. Is.	1	1	–	1	1
Cuba	114	–	–	881	–
Neth. Ant.	3	1	3	3	1
United States	9	24	–	1	2,317
Ecuador	–	–	–	–	3
Honduras	–	1	3	–	–
Colombia	56	–	7	–	–
Total	19,800	4,445	8,039	18,996	22,518
Total Value (thousand $)	2,643	588	953	2,281	2,598

Source: DBS, Trade of Canada.

TABLE 40

Canadian Exports of Linseed Oil Cake and Meal

(calendar year)
(tons)

Destination	1961	1962	1963	1964	1965
United Kingdom	11,449	9,996	10,394	12,145	21,278
British Guiana	351	264	124	192	114
Barbados	37	30	79	38	12
Leew.-Wind. Is.	126	114	96	117	114
Trinidad	909	827	977	860	735
United States	3,174	1,505	601	743	1,002
Ireland	–	–	–	1,046	–
Venezuela	–	–	105	–	–
Cuba	–	5	–	–	–
Total	16,046	12,741	12,376	15,141	23,255
Total value (thousand $)	1,059	1,016	1,117	1,260	1,897

Source: DBS, Trade of Canada.

Very small quantities of linseed meal have, in previous years, been exported to the Netherlands Antilles, British Honduras and Bermuda. In 1965 improved sales of linseed meal to the United Kingdom, traditionally Canada's major customer, were primarily responsible for a 53 per cent increase in export volume. The value of exports, which had ranged for years slightly above $1 million, rose from $1.26 million in 1964 to $1.90 million in 1965.

CANADIAN IMPORTS OF INEDIBLE VEGETABLE OILS

TABLE 41

Canadian Imports of Castor Oil

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United Kingdom	370	28	15	2	7
India	29	22	13	21	11
Brazil	4,239	3,039	5,757	5,193	4,830
United States	90	425	164	222	161
Netherlands	331	–	–	–	1,769
Japan	–	331	–	–	–
Total	5,058	3,845	5,948	5,438	6,778
Total value (thousand $)	711	523	695	618	801

Source: DBS, Trade of Canada.

TABLE 42

Canadian Imports of Oiticica Oil

(thoudand pounds)

Country of Origin	1961	1962	1963	1964	1965
Brazil	221	559	448	214	204
United States	237	132	–	32	–
Total	458	691	448	246	204
Total value (thousand $)	67	122	128	50	49

Source: DBS, Trade of Canada.

The consumption of oiticica oil has dwindled rapidly since 1962, Brazil remaining the principal supplier.

TABLE 43

Canadian Imports of Tung Oil(1)

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United Kingdom	–	–	–	11	–
Hong Kong	89	87	208	1,101	948
Argentina	1,195	2,116	1,318	1,307	934
Paraguay	581	–	84	208	62
United States	1,039	416	598	232	198
Netherlands	–	–	9	–	–
Total	2,903	2,619	2,217	2,860	2,142
Total value (thousand $)	757	1,039	900	744	547

(1)Reported as Chinawood Oil until 1963, and as Chinawood/Tung Oil since 1964.
Source: DBS, Trade of Canada.

The value of total imports has ranged from $550,000 to slightly over $1.0 million. The total volume of imports is fairly steady, but since 1964 a substantial portion has come from Hong Kong and challenged Argentina as the primary supplier of the Canadian market. China is the leading producer of tung oil, and Argentine production has dropped considerably since 1964.

CANADIAN MARINE OIL AND MEAL SITUATION

TABLE 44

Canadian Production of Marine Oils by Types and Areas

(Thousand Pounds)

	1961	1962	1963	1964	1965
Atlantic Coast					
Groundfish					
Body and Offal	(1)	890	1,366	1,437	1,970
Liver	(1)	6,500	7,360	5,810	4,560
Herring	(1)	1,545	1,400	4,730	7,140
Other Fish Liver	(1)	–	–	(2)	(2)
Seal	–	1,740	1,534	1,270	2,350
Other	(1)	53	94	605	1,015
Atlantic Total	10,590	10,728	11,754	13,852	17,035
Pacific Coast					
Herring	42,600	40,750	52,800	44,500	41,750
National Total	53,190	51,478	64,554	58,352	58,785

Source: Based on DBS No. 24-002

(1) DBS changed the classification in 1962. Therefore, following production figures for Atlantic Coast oils are approximations of the volume produced for each class:

Cod (vitamin and industrial): 5,160,000 lbs.
Herring : 89,000 lbs.
Others : 5,040,000 lbs.

Revised figures published by DBS in No. 24–201 reduced the Atlantic Coast oil production to 7,856,000 lbs., indicating the difficulty in assessing the production of a multitude of small plants.

(2) Confidential, included with "Other".

TABLE 45

British Columbia Herring Production Report

Cumulative totals for the fishing season, which ends each year during the month of March.

	Final 10/3/62	Final 10/3/63	Final 28/3/64	Final 27/3/65	Final 26/3/66
Total Catch, tons	224,161	265,647	262,045	240,580	180,365
Production					
Bait, tons	575	886	1,128	893	848
Meal, tons	39,535	48,035	46,778	43,062	32,163
Oils, ('000 lbs.)	43,250	44,100	45,100	50,300	35,600
Average Yields					
% Meal	17.7	18.2	17.9	18.0	17.9
% Oil	9.7	8.3	8.7	10.5	9.9

Source: Department of Fisheries, Vancouver Office.

The results show that during the season 1965-66, the total catch declined by about 25 per cent compared with the previous season. The herring schools did not appear at the normal time at the usual fishing areas. However, in one area the catch increased from 22,000 tons to nearly 58,000 tons, indicating the difficulty in finding the reasons for fluctuations in the catch.

Meal and oil yields continue to be fairly uniform. Since all manufacturers record their production in U.S. gallons, but have to report to the Department of Fisheries in Imperial gallons, errors in oil yields may arise when converting these values.

TABLE 46

Canadian Supply and Disposition of Fish Meal

(short tons)

	1961	1962	1963	1964	1965
Production	78,632	78,245	85,467	76,565	96,636
Imports	6,418	151	2,982	4,890	71
Exports	39,975	47,379	55,553	62,488	58,944
Apparent Domestic Disappearance	44,075	31,017	32,896	18,967	37,763

Source: Based on DBS data.

TABLE 47

Canadian Supply and Disposition of Marine Oils
(thousand pounds)

	1961	1962	1963	1964	1965
Production	53,190	51,478	64,554	58,352	58,785
Imports	33,443	43,904	35,852	1,085	8,172
Exports	8,628	7,713	17,226	34,692	19,693
Apparent Domestic Disappearance	78,005	87,669	83,180	24,745	47,264

Source: Based on DBS data.

TABLE 48

Canadian Imports of Marine Oils by Types
(thousand pounds)

	1961	1962	1963	1964	1965
Fish Liver & Visceral Oil	–	–	–	105	261
Fish & Marine Animal Oil	31,387	42,124	24,165	980(1)	7,911
Whale & Spermaceti	1,139	887	648	–	–
Cod Liver Oil	917	893	1,039	–	–
Total	33,443	43,904	35,852	1,085	8,172
Total value (thousand $)	2,274	2,112	1,707	168	862

Source: DBS No. 65–007

(1)Includes Whale Oil, previously included in class 2297; change in classification.

TABLE 49

Canadian Exports of Marine Oils by Types
('000 lbs.)

	1961	1962	1963	1964	1965
Herring Oil	959	88	947	23,291	7,578
Cod Liver Oil, Sun Rotted	7,004	5,885	10,047	6,965	5,112
Fish and Marine Animal Oil, N.E.S.	524	146	1,302	1,113	2,477
Whale Oil	129	1,260	4,918	3,161	4,526
Fish Liver & Visceral Oils	12	34	12	162	(1)
Total	8,628	7,713	17,226	34,692	19,693
Total value (thousand $)	593	504	1,067	2,993	1,929

Source: Based on DBS No. 65-004

(1)Fish Liver and Visceral Oil not listed any more in 1965.

TABLE 50

Use of Marine Oils in Margarine and Shortening

Year	Used in Margarine (million lbs.)	Per Cent of Total Fats in Margarine	Used in Shortening (million lbs.)	Per Cent of Total Fats in Shortening	Total Marine Oils in Margarine and Shortening (million lbs.)
1960	12	9.1	8	4.5	20
1961	32	21.3	17	10.2	49
1962	48	32.2	22	11.9	70
1963	65	46.6	23	12.4	88
1964	30	21.0	13	7.0	43
1965	30	22.1	15	7.7	45

TABLE 51

Canadian Production of Fish Meals by Type and Area

(Short Tons)

	1961	1962	1963	1964	1965
Atlantic Coast					
Groundfish	(1)	33,392	28,371	25,342	42,794
Herring	(1)	4,375	4,667	6,247	12,783
Other	(1)	–	611	636	930
Atlantic Total	33,599(2)	37,767	33,649	32,525	56,507
Pacific Coast					
Herring	39,794	40,478	51,818	44,040	40,129
National Total:	78,632	78,245	85,467	76,565	96,636

Source: Based on DBS No. 24-002

(1) No breakdown available.

(2) Originally reported at 38,838 tons but later revised by DBS (DBS No. 24-201 for 1962)

TABLE 52

Canadian Imports of Fish Meal

(short tons)

	1961	1962	1963	1964	1965
Country of Origin					
Peru	5,521	–	2,666	–	–
United States of America	897	151	66	90	71
Rep. S. Africa	–	–	250	4,800	–
Total	6,418	151	2,982	4,890	71
Total value (thousand $)	596	19	327	552	10

Source: DBS No. 65-007

TABLE 53

Canadian Exports of Fish Meal and Condensed Solubles

(Short Tons)

	1961	1962	1963	1964	1965
Herring Meal and Pilchard Meal	32,111	36,680	45,149	50,497	40,112
Fish Meal, N.E.S.	7,864	10,699	10,404	11,991	18,832
Fish Condensed Homogenized Solubles	1,296	1,658	2,237	1,871	1,838
Total (Meal Only)	39,975	47,379	55,553	62,488	58,944
Total value (Meal Only) (thousand $)	4,519	6,509	7,677	8,851	9,336

Source: Based on DBS No. 65-004

Review of Canadian Fish Oil and Meal Situation

Herring Landings

Herring landings on the Atlantic coast rose in 1965 to 202,000 tons from 156,000 tons in 1964, and in value from $3.2 million to $4.3 million. Cod maintained its first place at about the same level as before with 285,000 tons.

This increase in herring landings was distributed among the Provinces as follows:

	1964	1965
	(thousand tons)	
Newfoundland	9.3	13.8
Nova Scotia	49.3	71.6
New Brunswick	75.4	91.4
P.E.I.	1.8	2.3
Quebec	20.5	22.9
Total	156.3	202.0

The most significant growth took place in Nova Scotia and New Brunswick. In New Brunswick much of the herring is of the small sardine variety and is canned for human consumption. The increase in Atlantic herring meal production from 6,247 tons to 12,783 tons, resulted primarily from the expanding herring reduction industry rather than from the increase in production of herring bloaters, canned sardines, etc.

In British Columbia herring landings dropped in 1965 to 221,800 tons from 252,600 in 1964. Herring meal production dropped from 44,040 tons to 40,129 tons during the same period, representing yields of 17.5 per cent and 18.1 per cent respectively. These results, based on the Monthly Review of Canadian Fisheries Statistics, DBS #24-002, cover the calendar year and should not be confused with the seasonal report of Table 45 for British Columbia, which is based on Department of Fisheries data.

Herring oil production reached a record high on the Atlantic coast with an increase from 4.7 million lbs. in 1964 to 7.1 million lbs. in 1965. Further increases must be expected for 1966. In British Columbia herring oil production fell during the same period from 44.5 to 41.8 million lbs.

Fish Oil Situation

Next to herring oil production, ground fish oils, i.e. industrial grade body and liver oils, usually derived from offal, represent the most important group of oils, Table 44. Whale oil is not reported under production, since too few plants are involved, but its export volume is given as 4.5 million lbs. in 1965 compared with 3.2 million lbs. in 1964. Italy and the Netherlands purchased most of this oil in 1965.

Seal oil production increased in 1965 to 2.4 million lbs. from 1.3 million lbs. in 1964.

Oil imports rose to a modest level of 8.2 million lbs., largely as a result of Icelandic herring oil (5.5 million lbs.) and of United States menhaden oil (1.4 million lbs.) entering the country.

Total exports dropped in 1965 to 19.7 million lbs. from 34.7 million lbs. in 1964, mainly because of the decline in herring oil exports from 23.3 to 7.6 million lbs. Since total consumption of marine oils in margarine and shortening climbed during this period from 43 to 45 million lbs., it must be assumed that the calculated apparent domestic disappearance in 1964, Table 47, of 24.7 million lbs., differs more than usually from actual consumption, because of the absence of inventory figures. These stocks were probably largely in the tanks of edible oil refiners.

Fish Meal Situation

Total fish meal production reached a high of 96,636 tons in 1965, largely because of an increase in Atlantic groundfish meal (whitefish meal) output from 25,300 tons to 42,800 tons. Total fish meal production (56,500 tons) on the Atlantic coast exceeded West coast production (40,100 tons) for the first time by a substantial margin.

Herring meal exports dropped from 50,000 tons to 40,000 tons, and all but 2,100 to 2,500 tons were purchased by the United States.

Fish meal exports, and these are largely composed of whitefish meal, rose from 14,000 tons in 1964 to 18,800 tons in 1965, and 70-80 per cent were sold to the United Kingdom, with the bulk of the remainder going to the United States.

Canadian Atlantic Herring Fishery Conference

On May 5 – 7, 1966, The Federal – Provincial Atlantic Fisheries Committee sponsored the Canadian Atlantic Herring Fishery Conference in Fredericton, N.B. It was the declared objective of this conference to assess the potential of the Atlantic herring fishery and encourage the orderly

development of this sector of the fishing industry. More than 300 people from across Canada, the United States and Europe attended the presentation of over 20 papers.

Development of new herring reduction industry on Atlantic coast

Dr. B. Weinberg of the Department of Industry, Ottawa, reviewed the development of the reduction industry in Canada. Discussing the development of a new industry on the Atlantic coast, he stressed the need to place priority on the production of high quality oil and meal, so as to be able to meet future requirements of the refiners and feed manufacturers.

On the Pacific coast the herring reduction industry is composed of 10 plants of a total daily raw material capacity of approximately 7,000 tons. This area is fished to the limit, and little change in capacity can be expected. On the other hand, the reduction industry on the Atlantic coast is made up of more than 50 plants. Until about two years ago nearly all were small and designed for offal disposal. The bulk of all whitefish meal, made largely from cod and flatfish trimmings, is produced in these plants. The recognition of the existence of unexploited herring stocks as well as more favorable market developments for meal and oil, have brought about an expansion of the reduction capacity on the Atlantic coast from approximately 3,000 tons of raw material per day two years ago, to an estimated 5,435 tons in 1966.

The construction of large reduction plants, similar to those on the West coast, as well as the expansion of the offal meal plants, account for this development. Other plants are under construction or in the planning stage. A further expansion, based largely on whole herring, and amounting to between 3,000 and 4,000 tons daily capacity, were anticipated by Dr. Weinberg for the next two years.

Nutritive Value of Herring Meal

Dr. H.L.A. Tarr, Director, Fisheries Research Laboratory, Department of Fisheries, Vancouver, reported about chick feeding tests, in which rations included fish meals subjected to various heat treatments, such as commercial flame drying. It was concluded that only excessive heating destroyed the nutritive value of herring meal protein, and that normal commercial drying procedures were not harmful, when vitamins of the "B complex" were added to the rations.

Dr. Tarr pointed out that since the discovery of vitamin B_{12}, nutritionists have searched for another growth factor in the meal, but without success. Evidence so far does not support the existence of such a factor, but rather attributes growth to secondary effects.

The general superiority of herring meal compared with meals prepared from sardine, anchovy and menhaden, is due to such factors as the greater stability of herring lipids, the prevention of overheating and the absence of the "curing" practice.

Dr. Tarr stressed the metabolizable energy value of fish meal lipids, and that proper antioxidant treatment and the addition of the required vitamins, would preserve the metabolizable energy value of the meal and also make it more available. Antioxidant treatment has made bulk handling an easy matter, and the addition of BHT or ethoxyquin should be mandatory. Ethoxyquin, while being more expensive, is the more effective antioxidant and claimed to be more economical in its application.

Fat Content of Herring

Dr. D.R. Idler, Director, Fisheries Research Laboratory, Department of Fisheries, Halifax, when speaking on the subject of the fat content of herring, warned that generalizations can be made, provided it is appreciated that variations can be quite large from year to year and area to area.

Dr. Idler found that West coast herring from July through December had a uniform and high fat content (16 – 18 per cent) with the exception of November, when it dropped to 13 – 14 per cent. Spawning is earlier on the West Coast, and herring contained least fat (5 per cent) in March, and by June the high point (24 per cent) was reached. Dr. Idler suggested that West coast herring contain more fat for a longer period of time than do those of the Atlantic area. However, month by month data for a whole year are available only for the Bay of Fundy area, and it is known that at least eleven different stocks of herring exist in the North-West Atlantic area.
Dr. Idler's comments on other fishing areas are summarized below:

Southern Gulf Area: Majority of herring in this area spawn in May and June, and fat content is low and variable. Fat content varied from 7 – 15 per cent.

Northwestern Gulf of St. Lawrence: Fish spawn in May and June and fat content at this time averaged 8 per cent. By October the fat content increased to an average of 13 per cent.

Outer Coast of Nova Scotia: May samples averaged 5 per cent, fat and from July to August averaged 12 – 13 per cent.

West Coast and South Coast of Newfoundland: February and March averages were 10 – 11 per cent.

Bay of Fundy: Average fat content of small "sardine" herring was low, 2.4 – 8.2 per cent, except in fall of 1945 when it reached 11 – 14 per cent.

In another location it was noted that herring was always very fat by comparison with other areas, the June fish averaging 13 per cent fat. September – October values of 14.8, 19.4 and 27.4 per cent were reported.

Herring Resources and Expansion Potential

Mr. S.N. Tibbo, of the Fisheries Research Station, Department of Fisheries, St. Andrews, N.B., reported on the abundance of the Atlantic herring population. He stressed that most knowledge of herring catching is related to inshore fishing, where herring is seasonally abundant. Except for efforts by European nations, very little has been done to develop offshore fishing. Mr. Tibbo stated that present catches can be increased substantially. Even the landings of 1964 and 1965 remained below those of the mid 1940's. Mr. Tibbo could not predict what the ultimate harvest might be, but he recommended that the best management practice at present would appear to be the encouragement of industry to further develop the harvesting of this resource.

No definite forecasts were made by any of the scientists attending the Conference concerning the actual volumes of herring which can safely be harvested. Gross under-exploitation of present resources, especially in the waters surrounding Newfoundland and offshore at Nova Scotia, was the limit of most statements.

Mr. L.S. McArthur, Director General, Economics Service, Department of Fisheries, Ottawa, made reference to forecasts of 1 billion pounds of herring to be caught by 1968, and that this estimate would rise to 2 billion pounds in 1975. The Federal-Provincial Atlantic Fisheries Committee in September of last year considered these estimates as rather conservative.

Nova Scotia was most optimistic and expected an increase from 143 million lbs. in 1965 to 500 million pounds in 1968, and 1 billion lbs. in 1975. Mr. Meagher, Deputy Minister of Fisheries in Nova Scotia, pointed to a substantial increase in the offshore herring fleet and stated that Nova Scotia will soon have a reduction capacity of 3,000 tons per day.

In Newfoundland the catch is expected to increase to 190 million lbs. in 1968 and 210 million lbs. in 1975.

New Brunswick forecasts 300 million lbs. in 1968 and 650 million lbs. in 1975.

All these projected developments will depend on the availability of herring and the ability of the market to absorb the oil and meal. The Conference ended on a note of cautious optimism.

For Further Information On Herring Conference, write to:

Secretariat,
Industrial Development Service,
Department of Fisheries of Canada,
Sir Charles Tupper Building,
Ottawa 8, Canada.

New Fish Meal Labelling Regulations

The Plant Products Division of the Department of Agriculture has for some time examined the possibility of abolishing the concept of "oily fish meal." In March 1966 it has proposed to amend Subsection (2a) of Section 23 respecting the labelling of single ingredient feeds shipped to a manufacturer. Item 12 of table 4 of the said regulations has been revoked and the following substituted therefore:

Fish meal or any other product (except liver meal or oil) of fish or fish wastes:

Minimum percentage crude protein.
Minimum percentage crude fat.
Maximum percentage crude fat.
Maximum percentage crude fibre, if in excess of 2 per cent.
Maximum percentage of salt (NaC1).

It is expected that the range between minimum and maximum fat content will be quite narrow.

The Plant Products Division has also revoked Sub-item 2 of Item 10 of Schedule C of said regulations and substituted the following:

10 (2) Fish meal is the clean, dried, ground residue from undecomposed whole fish and/or fish cutting, and may contain an antioxidant approved by the Director.

Also, Sub-item 4 of Item 10 of Schedule C has been revoked. Therefore there is no longer a definition for an oily fish meal. These revisions are a response to objections raised by manufacturers of oily fish meal from herring. In the past, feed manufacturers often regarded a high oil content as a sign of lower quality.

The demand for high metabolizable energy value, however, changed the situation and high fat content is often an asset. Fish meal is paid for solely on a protein basis, and many meal manufacturers feel that the value of the oil should be taken into consideration.

Another change in the labelling regulations drops the requirement, that individual bags of a bulk load show the composition. The composition may in future be shown only on the invoice.

CANADIAN TRADE IN ANIMAL FATS

TABLE 54

Canadian Imports of Tallow(1)

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
Sweden	–	111	14	–	–
Australia	–	662	–	7	–
New Zealand	–	11	–	–	–
United States	2,687	4,169	5,234	8,673	8,007
Total	2,687	4,953	5,247	8,680	8,007
Total value (thousand $)	261	475	518	799	915

Source: DBS, Trade of Canada.

(1)Until 1963 this tallow was imported as class #2308, and changed to class #39-126 in 1964.

The United States is the principal supplier of tallow, most of this presumably of an inedible grade. The average values were in 1963: 9.9¢, in 1964: 9.2¢ and in 1965: 11.4¢ per pound.

TABLE 55

Canadian Exports of Inedible Tallow

(thousand pounds)

Destination	1961	1962	1963	1964	1965
United Kingdom	50,446	14,521	39,029	59,954	44,907
Italy	434	1,839	–	2,040	1,520
Netherlands	–	12,432	5,278	654	13,500
Iran	110	–	1,756	1,926	–
Ghana	–	–	1,291	1,164	2,679
Southern Rhodesia	–	–	–	473	–
Republic of South Africa	2,482	2,215	2,745	5,377	13,252
Malaysia	–	–	200	100	–
Japan	10,692	18,303	22,946	23,754	25,456
Korea	–	–	–	110	–
British Guiana	–	–	–	126	457
Colombia	1,095	1,616	610	250	100
Ecuador	85	993	2,261	3,515	8,247
Venezuela	235	–	–	221	–
Barbados	1,921	517	285	895	1,075
Leew. Wind. Is.	107	239	202	148	263
Trinidad	1,099	380	670	886	3,607
Cuba	24,786	33,635	22,952	35,577	14,277
El Salvador	–	–	2,829	103	2,067
United States	1,194	1,676	1,179	598	354
W. Germany	–	–	–	–	2,170
Spain	–	–	–	–	998
Switzerland	–	–	–	–	638
Thailand	–	–	22	–	–
Rhodesia & Nyassaland	–	–	1,347	–	–
Jamaica	1,339	3,562	1,568	–	–
Belgium	–	599	–	–	–
Dom. Republic	–	100	401	–	–
Nicaragua	–	50	–	–	–
Portugal	–	–	662	–	–
Total	96,024	92,676	108,233	137,872	135,564
Total Value (thousand $)	6,899	6,144	7,237	10,760	12,512

Source: DBS, Trade of Canada.

TABLE 56

Canadian Imports of Lard(1)

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United States	25,130	24,784	17,133	16,001	20,734
United Kingdom	15	–	–	–	–
Total	25,145	24,784	17,133	16,001	20,734
Total value (thousand $)	2,573	2,506	1,491	1,647	2,564

Source: DBS, Trade of Canada.

(1)Until 1962 this class comprised "Lard and Compounds Stearine", in 1963 this was changed to "Lard" only and listed as class 345 to be changed to #12-099 in 1964. The class consists now of edible lard only.

The value of imports has ranged from $1.5 to $2.6 million, virtually all coming from the United States. Average prices over the past three years are as follows:

1963 – 8.7¢ per pound
1964 – 10.3¢ " "
1965 – 12.4¢ " "

TABLE 57

Canadian Exports of Lard

	1961	1962	1963	1964	1965
Quantity (thousand lbs.)	912.1	32.2	23.3	34.1	30.5
Value (thousand $)	132.4	6.1	4.4	6.6	6.4

Source: DBS, Trade of Canada.

With the exception of 1961, when Canada exported lard to Cuba and to Hong Kong, the bulk of the small volume of lard usually has been exported to St. Pierre and Miquelon.

TABLE 58

Canadian Imports of Grease, Including Wool Grease and Lanolin(1)

(thousand pounds)

Country of Origin	1961	1962	1963	1964	1965
United Kingdom	388	352	223	443	462
Ireland	12	–	–	22	–
West Germany	–	23	72	74	63
Australia	–	–	–	49	107
United States	21,814	21,472	29,582	23,001	14,672
Japan	–	–	–	–	5
Total	22,213	21,846	29,877	23,589	15,308
Total value (thousand $)	1,546	1,422	1,962	1,939	1,558

Source: DBS, Trade of Canada.

(1) Until 1963 this class was listed as #2304: Grease and Degras, and has appeared under the above description from 1964 as #39115.

The bulk of the imports of this class come from the United States, and a small fraction from the United Kingdom. Average prices per pound were 6.5¢ in 1962, 6.6¢ in 1963, 8.2¢ in 1964 and 10.2¢ in 1965. The total value has ranged from $1.4 to $2.0 million per year. There is a possibility that inedible grades of tallow are sometimes reported in such a manner as to be included in this class.

TABLE 59

Canadian Imports of Animal Oils and Fats(1)

(thousand pounds)

Country of Origin	1961(2)	1962(2)	1963	1964	1965
Poland	–	–	–	2	–
United States	562	1,852	3,117	1,335	748
United Kingdom	291	12	8	–	12
Australia	18	–	59	–	10
Belgium – Luxemburg	–	17	11	–	–
Ireland	–	–	29	–	–
Total	870	1,881	3,224	1,337	771
Total value (thousand $)	103	192	416	174	124

Source: DBS, Trade of Canada.

(1) Import class #39–199 contains the following items: chicken fat, lard oil, neatsfoot oil, animal stearine and tallow oil.

(2) Until 1963, this class #39199 was imported largely as Animal Oil NOP #2293, consisting primarily of inedible grades of animal and chicken fats.

TABLE 60

Canadian Exports of Animal Oils and Fats

(thousand pounds)

Destination	1961	1962	1963	1964	1965
United Kingdom	289	289	228	553	332
Belgium-Luxemburg	–	–	(1)	(1)	–
West Germany	–	1	1	2	–
Netherlands	–	–	438	–	–
Spain	–	–	844	–	–
Japan	670	952	551	–	915
Bermuda	–	–	(1)	–	–
Jamaica	21	6	27	–	46
Leew.-Wind. Is.	–	–	(1)	–	–
Cuba	149	66	(1)	–	–
United States	63	728	1,411	772	482
Italy	–	1,514	–	650	–
Colombia	83	36	–	–	–
Hong Kong	65	–	–	–	–
Finland	–	–	–	41	–
Bahamas	–	–	–	1	–
Total	1,340	3,592	3,501	2,019	1,775
Total Value ('000 $)	122	216	171	159	129

(1) Less than 500 lbs.

Source: DBS, Trade of Canada.

These values represent export class #39-199, including such items as chicken fat, rendered beef fat, grease, lanolin, oleo stock and stearine, etc. Items of this class are of little impact and the total volume continues to decline.

REVIEW OF FINISHED PRODUCTS

TABLE 61

Canadian Production of Specified Oils & Fats Products
(Calendar Year)
(Million Pounds)

	1961	1962	1963	1964	1965
Margarine	184	187	172	175	167
Shortening					
Package	52	52	54	54	51
Bulk	116	129	130	139	140
Refined Oils					
Coconut	15	20	17	15	15
Salad & Cooking	60	69	78	72	74
Lard	105	99	100	108	97
Tallow					
Edible	41	37	42	50	50
Inedible	165	164	174	199	204
Grease, other than white	6	5	5	6	5
Other oils & fats(1)	6	6	8	8	7

(1) Includes oleo oil, oleo stearine, oleo stock, neatsfoot, white oil and other oils.
Source: DBS, No 32-006

Margarine Trends:

Margarine retail prices have continued their rise from 31.6¢ per pound in January 1965 to 34.6¢ in December 1965. At the same time, margarine production dropped from 175 million pounds in 1964 to 167 million pounds in 1965, involving a decrease per capita from about 8.8 lbs. to 8.6 lbs. Initial reports for the first 3 months of 1966 indicate a small increase in margarine production.

Shortening production, too, failed to keep up with the population expansion. Retail package sales dropped to 51 million pounds, the lowest since 1961, while bulk shortening increased slightly to 140 million pounds. Retail shortening prices rose from 37.3¢ to 39.6¢ per pound in the course of 1965 (Table 69). Bulk shortening continued to account for nearly 75 per cent of the market.

Salad and cooking oils showed a slight increase of 2 million pounds in 1965, reaching 74 million pounds, which appears to indicate that Canadian consumers have accepted liquid oils in home food preparation.

Lard production fell by 11 million pounds to 97 million pounds, largely because of the shortage of hogs. Retail lard prices rose in 1965 from 25.7¢ to 29.3¢ per pound.

Edible tallow production in 1965 held its level and inedible tallow production registered a slight rise. Inedible tallow continued to account for 75 per cent of all production. The bulk of the latter was again exported, while edible tallow exports have not occured for the past three years.

TABLE 62

Canadian Consumption of Oils & Fats in Margarine & Shortening(1)

(Calendar Year)

(thousand pounds)

	1961	1962	1963	1964	1965
Margarine					
Vegetable Oils					
Coconut	13,470	13,353	3,543	822	336
Cottonseed	6,855	3,115	2,839	3,580	3,581
Palm (2)	18,247	13,241	6,178	5,665	6,400
Soybean	65,287	55,192	46,933	81,070	67,196
Other (3)	7,358	11,814	12,652	15,079	20,500
Total	111,217	96,715	72,145	106,216	98,013
Marine Oils	31,568	48,293	64,555	29,734	30,026
Animal Oils					
Lard	5,301	7,470	1,733	5,953	7,902
Edible Tallow	(4)	(4)	(4)	20	–
Other	74	45	10	–	–
Total	5,375	7,515	1,743	5,973	7,902
Grand Total	148,160	152,523	138,443	141,923	135,941
Shortening					
Vegetable Oils					
Coconut	3,399	2,238	2,347	2,660	2,590
Cottonseed	11,232	7,448	7,264	9,205	12,138
Palm (2)	18,375	19,033	12,911	9,853	9,414
Soybean	46,248	52,180	55,324	62,596	59,685
Other (3)	11,894	21,151	24,392	23,661	25,702
Total	91,148	102,050	102,238	107,975	109,529
Marine Oils	16,938	21,553	22,855	13,486	14,726
Animal Oils					
Lard	25,048	24,367	23,206	27,198	23,536
Edible Tallow	30,921	30,415	33,322	42,813	42,348
Other	2,304	3,222	2,937	1,281	1,236
Total	58,273	58,004	59,465	71,292	67,120
Grand Total	166,359	181,607	184,558	192,753	191,375

(1) All figures on a refined oil basis.

(2) Includes palm kernel to Dec. 1962, palm kernel included in "Other" from Jan. 1963.

(3) Includes Rapeseed Oil.

(4) Included in "Other".

Source: DBS, No 32-006

TABLE 63

Canadian Imports of Margarine and Shortening

(thousand pounds)

Country of Origin	1963	1964	1965
United Kingdom	438	60	112
Sweden	144	264	156
United States	3,864	4,804	3,258
West Germany	1	–	–
Total	4,447	5,129	3,526
Total value (thousand $)	805	910	721

Source: DBS, Trade of Canada.

Imports of this class amount to $700–900,000 per year and the average value has ranged around 18¢ per pound.

Since Canada does not permit the entry of margarine, this group of commodities essentially includes, apart from shortenings, finished margarine oils for manufacture into the final product. There is the possibility that fully refined bulk shortening, shipped in tank cars, is sometimes listed in import class #39-559, Chemically Modified Oils, Fats and Waxes.

TABLE 64

Canadian Exports of Margarine and Shortening

(thousand pounds)

Destination	1961	1962	1963	1964	1965
United Kingdom	–	–	0.3	–	0.9
Netherlands	–	–	3.6	8.4	14.3
Cuba	–	–	44.6	–	0.4
Bahamas	0.7	0.3	1.7	1.0	–
Bermuda	18.7	23.5	37.3	43.1	68.2
St. Pierre	5.8	3.0	14.3	32.7	48.3
Barbados	–	0.7	0.7	–	–
Jamaica	–	0.6	15.8	14.3	11.0
United States	–	2.5	2.6	4.4	4.0
Leew. Wind. Is.	–	–	–	0.4	–
Norway	–	–	–	–	0.2
Japan	–	–	–	–	21.0
Total	25.2	30.6	120.9	104.3	168.3
Total value (thousand $)	6	7	30	27	42

Source: DBS, Trade of Canada.

Canada's exports of margarine and shortening continue to be rather insignificant and amounted to only $42,000 in 1965. The West Indian market suggests itself as the first choice for further development.

TABLE 65

Canadian Production of Salad Dressings and Mayonnaise

(Million Pounds)

	1960	1961	1962	1963	1964	1965
1st Quarter	8.4	8.8	9.3	10.0	10.6	13.0
2nd Quarter	13.4	13.9	14.3	16.4	17.3	17.1
3rd Quarter	7.6	8.8	10.0	9.1	9.1	10.9
4th Quarter	5.4	6.6	7.0	8.1	9.0	9.8
Total	34.8	38.1	40.6	43.6	46.0	50.8

Source: DBS No. 32-018, and 32-007 prior to 1962.

TABLE 66

Canadian Production of Sandwich Spreads
(Thousand pounds)

	1960	1961	1962	1963	1964	1965
1st Quarter	1,027	947	918	1,138	981	1,173
2nd Quarter	1,129	1,012	1,230	1,147	1,391	1,332
3rd Quarter	889	971	922	780	1,024	1,077
4th Quarter	872	947	844	998	1,023	988
Total	3,917	3,877	3,914	4,063	4,418	4,570

Source: DBS No. 32-018, and 32-007 prior to 1962.

TABLE 67

Canadian Production of Peanut Butter
(thousand pounds)

	1961	1962	1963	1964	1965
1st Quarter	10,566	9,961	10,472	12,029	12,881
2nd Quarter	9,731	10,660	10,037	11,677	10,136
3rd Quarter	8,724	8,841	10,277	11,111	11,072
4th Quarter	8,648	9,448	8,610	10,393	11,080
Total	37,669	38,910	39,396	45,210	45,169

Source: DBS No. 32-018, and No. 32-007 prior to 1962.

TABLE 68

Canadian Imports of Vegetable Cooking Fats and Packaged Salad Oils

(thousand pounds)

Country of Origin	1964	1965
United Kingdom	561	694
Sweden	78	111
Hong Kong	–	–
United States	3,503	8,448
Total	4,143	9,254
Total value (thousand $)	992	2,517

Source: DBS, Trade of Canada.

This class was established in 1964 as #39385 and includes vegetable cooking fats and packaged salad oils, a group called lard substitutes, but not shortenings.

Nearly $1.0 million of products were imported in 1964 at an average price of 24¢ per pound. In 1965 there was a substantial increase to $2.5 million at about 27¢ per pound, presumably as a result of the import of salad and cooking oils.

TABLE 69

Average Retail Prices For Canada For Certain Fats (Cents)

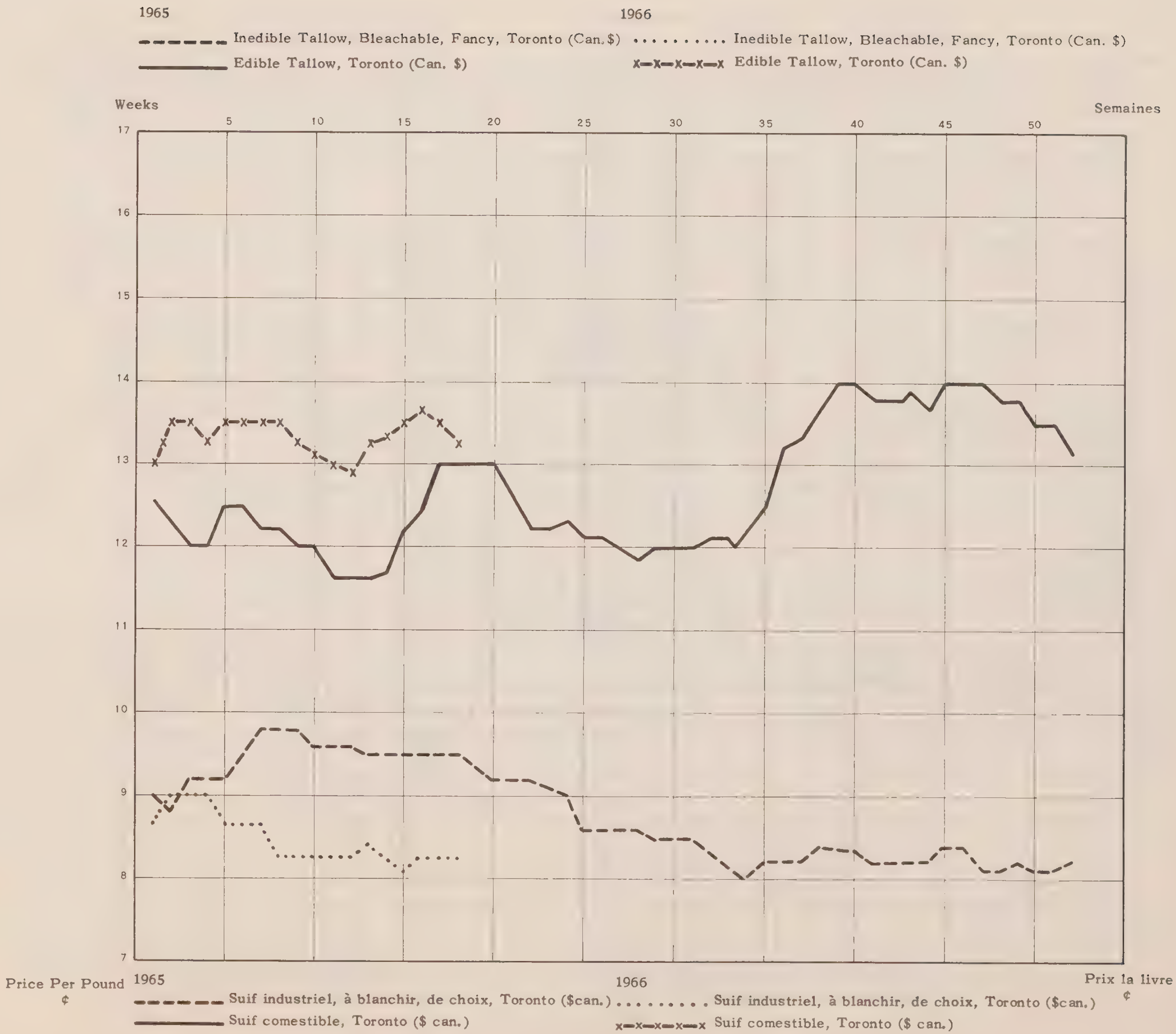
1962 – 1965

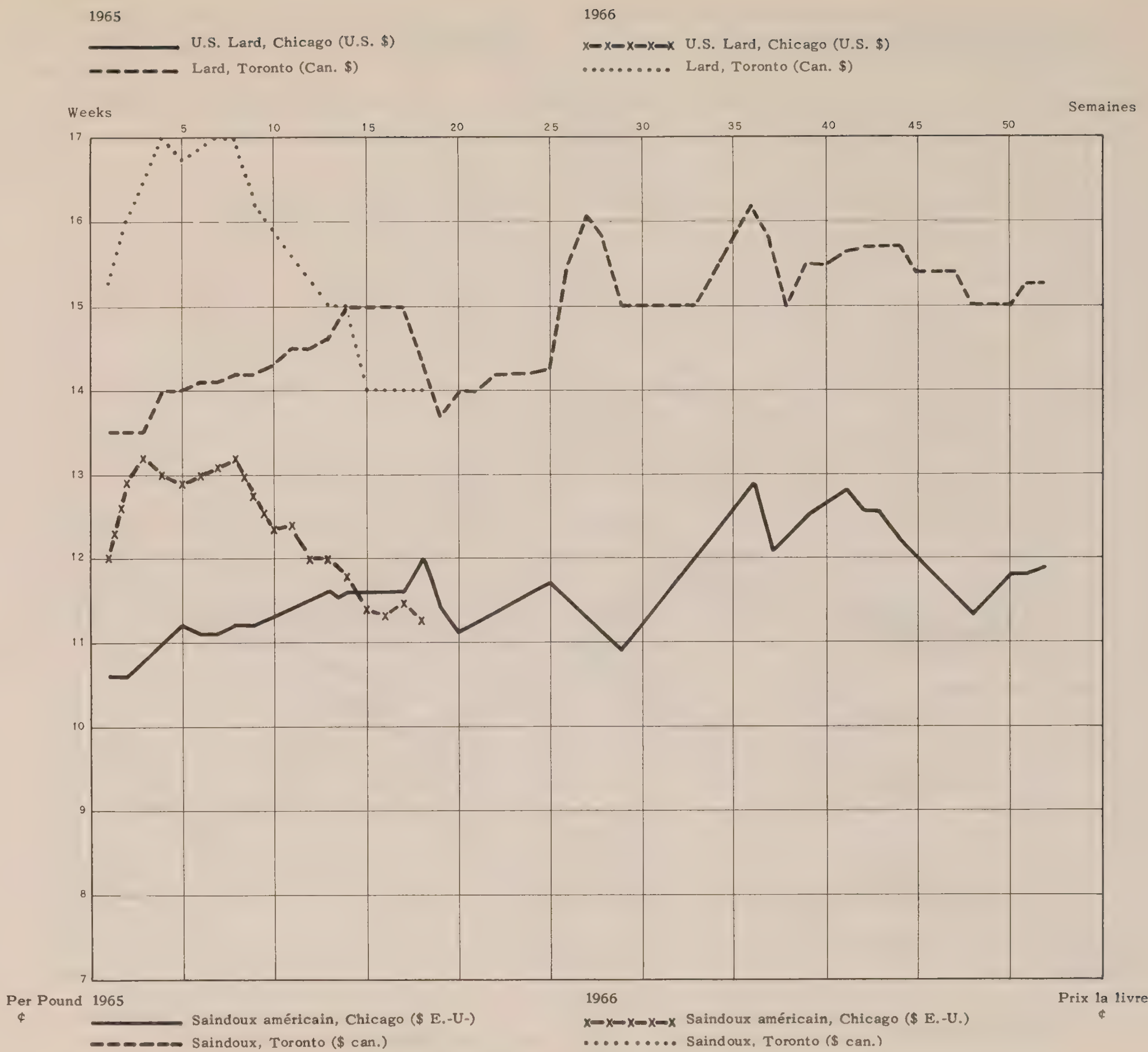
	1962	1963	1964	1965	Jan.*	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Margarine, lb.	29.6	28.0	29.3	33.9	31.6	32.5	33.0	33.8	34.0	34.4	34.6	34.6	34.6	34.1	34.5	34.6
Shortening, lb.	34.9	34.6	35.9	38.7	37.3	37.6	38.2	38.2	38.6	38.7	38.6	39.0	39.4	39.8	39.4	39.6
Lard, pure, lb.	22.5	22.8	23.7	27.2	25.7	25.6	25.8	25.8	26.4	26.8	27.0	27.6	28.1	28.5	29.2	29.3
Salad Dressing Jar, 16 oz.	42.6	42.6	42.6	44.0	42.6	43.7	43.7	44.1	44.3	44.3	44.1	44.1	44.1	44.3	44.3	44.5
Butter, creamery, first grade, 1 lb.	62.1	58.5	58.9	61.4	59.9	59.7	60.1	60.3	60.9	61.9	62.2	62.2	62.3	62.2	62.1	62.6

Source: DBS: Prices & Price Indexes, #62 002

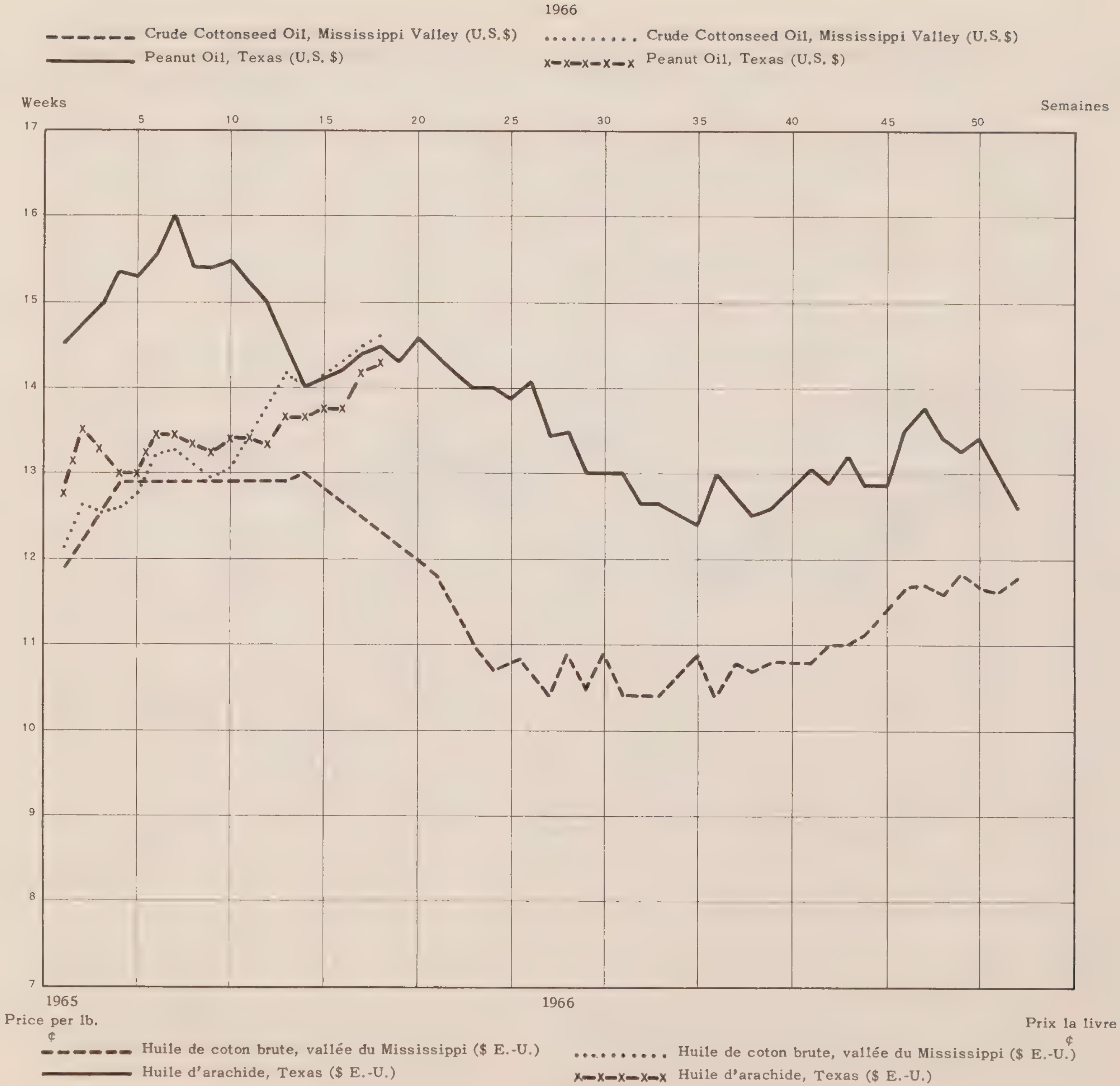
*The months cover the year 1965.

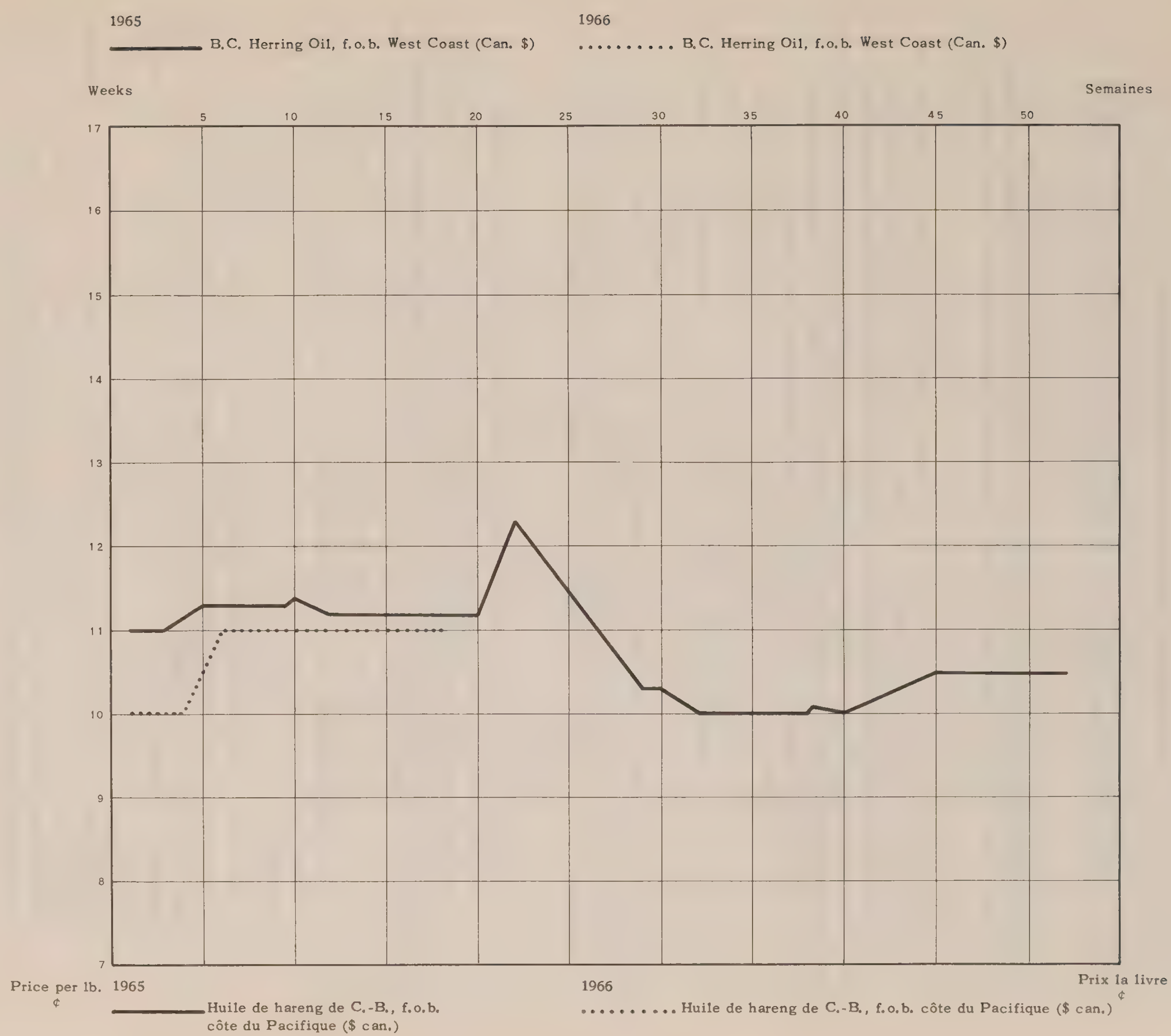

1965
Soybean Oil, Toronto (Can. $)
Soybean Oil, Decatur (U.S. $)
1966
Soybean Oil, Toronto (Can. $)
Soybean Oil, Decatur (U.S. $)
Weeks
Semaines
5
10
15
20
25
30
35
40
45
50
17
16
15
14
14
12
11
10
9
8
7
Price Per Pound
¢
Prix la livre
¢
1965
Huile de soya, Toronto ($ can.)
Huile de soya, Decatur ($ E.-U.)
1966
Huile de soya, Toronto ($ can.)
Huile de soya, Decateur ($ E.-U.)


1965
Inedible Tallow, Bleachable, Fancy, Toronto (Can.$)
Edible Tallow, Toronto (Can. $)
1966
Inedible Tallow, Bleachable, Fancy, Toronto (Can. $)
Edible Tallow, Toronto (Can. $)
Weeks
Semaines
5
10
15
20
25
30
35
40
45
50
17
16
15
14
13
12
11
10
9
8
7
Price Per Pound
¢
Prix la livre
¢
1965
Suif industriel, à blanchir, de choix, Toronto ($can.)
Suif comestible, Toronto ($ can.)
1966
Suif industriel, à blanchir, de choix, Toronto ($can.)
Suif comestible, Toronto ($ can.)



1965
U.S. Lard, Chicago (U.S. $)
Lard, Toronto (Can. $)
1966
U.S. Lard, Chicago (U.S. $)
Lard, Toronto (Can. $)
Weeks
Semaines
5
10
15
20
25
30
35
40
45
50
17
16
15
14
13
12
11
10
9
8
7
Per Pound ¢
Prix la livre ¢
1965
Saindoux américain, Chicago ($ E.-U-)
Saindoux, Toronto ($ can.)
1966
Saindoux américain, Chicago ($ E.-U.)
Saindoux, Toronto ($ can.)


1966
Crude Cottonseed Oil, Mississippi Valley (U.S.$)
Peanut Oil, Texas (U.S. $)
Crude Cottonseed Oil, Mississippi Valley (U.S.$)
Peanut Oil, Texas (U.S. $)
Weeks
Semaines
5
10
15
20
25
30
35
40
45
50
17
16
15
14
13
12
11
10
9
8
7
1965
1966
Price per lb.
¢
Prix la livre
¢
Huile de coton brute, vallée du Mississippi ($ E.-U.)
Huile d'arachide, Texas ($ E.-U.)
Huile de coton brute, vallée du Mississippi ($ E.-U.)
Huile d'arachide, Texas ($ E.-U.)



1965
B.C. Herring Oil, f.o.b. West Coast (Can. $)
1966
B.C. Herring Oil, f.o.b. West Coast (Can. $)
Weeks
Semaines
5
10
15
20
25
30
35
40
45
50
17
16
15
14
13
12
11
10
9
8
7
Price per lb.
¢
Prix la livre
¢
1965
Huile de hareng de C.-B., f.o.b. côte du Pacifique ($ can.)
1966
Huile de hareng de C.-B., f.o.b. côte du Pacifique ($ can.)

CANADIAN FATS AND OILS DEVELOPMENTS

Progress in Canadian Oilseed Breeding Research

At the annual meeting of the NRC Associate Committee on Grain Research held in Edmonton in February, 1966, various research workers reported on developments concerning oilseed crops.

1. **Flaxseed:** It is expected that varieties with improved rust-resistance and higher oil quality and content will be available within the next few years. The iodine values are expected to range from 195 to 197. Average oil content (dry basis) was reported at 42.8 per cent and protein content at 42.9 per cent for the 1965 crop.
2. **Rapeseed:** The Co-operative Rapeseed Test was conducted at 26 different locations, nearly all in Western Canada except for two in Quebec. Among the Argentine (**B. napus**) varieties, a University of Manitoba selection from Tanka, S61–478 was recommended for licensing under the name Target. Target is earlier and higher yielding in seed, oil and protein than other varieties of the Argentine type. The average performance of Target and the check varieties Tanka, Nugget and Golden in the 1964 and 1965 co-operative tests is given below:

Variety	Yield lb/ac.	% oil	% Protein	Days to Mature	Height inches
Target	1489	43.6	47.6	96	36
Tanka	1348	42.0	46.1	98	37
Nugget	1271	42.8	44.6	98	37
Golden	1280	41.1	46.0	98	38

Seven thousand pounds of Foundation seed of Target will be distributed to Manitoba and Saskatchewan growers in 1966. It is expected that Target will replace Tanka, Nugget and Golden by 1967–68 which have occupied about 30 per cent of the rapeseed acreage. It is expected that the earlier Polish type rape will continue to occupy 70 per cent of the seeded acreage. The Echo variety has shown superiority in yield over Arlo or common Polish and will occupy a large portion of the rapeseed acreage in 1966.

The Quebec Stations at Laval and La Pocatière which participated in the co-operative test averaged yields of seed from 1600 to more than 2000 lbs. per acre. These results are most promising.

Dr. R.K. Downey reported some significant progress in the study of genetic variations in isothiocyanate and oxazolidinethione content of rapeseed and mustard. He co-operates with Dr. C.G. Youngs of the Prairie Regional Laboratory, NRC, who has develcped a gas chromatographic procedure for rapidly analyzing, qualitatively and quantitatively the presence of these sulphur compounds.

Drs. Downey and Youngs found that certain varieties of Asiatic B. campestris contained only 3–butenyl isothiocyanate, and that in crosses with Canadian Polish rapeseed, the genetic constitution of the mother plant determined the compounds present in the seed. Thus, the absence of 4–pentenyl isothiocyanate and oxazolidinethione were each controlled by single recessive genes, and these two genes are independently inherited.

All Canadian rapeseed varieties contain major amounts of 3–butenyl and 4–pentenyl isothiocyanates and oxozolidinethione. Traces of 2–phenylethyl isothiocyanate are also present. The objective now is to produce rapeseed containing either a single sulphur compound or various combinations of two compounds. The meal from these seeds will be fed to test animals in order to determine the relative goitrogenicity, i.e., toxicity. At present, meal containing only 3–butenyl isothiocyanate is undergoing feeding trials.

Dr. Downey concluded: "The wide variation in types and amounts of these sulphur compounds, both within and between species, suggests that it may also be possible to develop strains without isothiocyanate or oxazolidinethione", i.e., rapeseed free of goitrogenic substances.

3. **Soybeans:** Professor Stefansson, Winnipeg, reported that temperatures in the Prairie Provinces were below the optimum required for growth of soybeans during a substantial part of the growing season. This often results in relatively low yields of seed and places soybeans in a relatively unfavorable position to compete with other oilseeds such as rape. The relatively high temperature requirement and maturity, which is delayed as day length increases, both tend to limit possibilities for extending the adaptation of soybeans in a northward direction. Soybean breeding at Winnipeg is to be terminated within two or three years. Variety trials will be continued to evaluate soybean strains developed at other stations.

   Dr. Donovan, Central Experimental Farm, Ottawa, considers improved cultural practices to be the key to higher soybean yields in all parts of Canada.

4. **Sunflower:** Work continues in Morden, Manitoba and Lethbridge, Alberta. The weather, rather than diseases, was responsible for low yields in 1965. Armavirec, an early maturing variety yielding 41 per cent oil, and recently introduced from Russia, has been licensed.

BUTTER SITUATION IN CANADA

The stocks of butter on March 1st, 1966 were 44,760,000 pounds compared to 69,645,000 pounds in 1965, the lowest on record since 1958. In 1965, consumption exceeded production by 20 million pounds. Both production and consumption decreased in 1965.

BUTTER

Year	Production	Consumption	Stocks
	(thousand pounds)		(first of year)
1961	352,133	288,309	133,271
1962	361,720	320,800	197,086
1963	351,919	351,300	238,050
1964	351,700	357,300	219,383
1965	337,100	356,400	100,021
1966			75,308

The Prairie Provinces, historically surplus producers of creamery butter, purchased butter from Eastern Canada for the first time. Butter production was down 4 per cent in the first two months of of 1966. The butter situation improved in Europe in 1965 and more butter is available for export.

MARINE OILS MAJOR TOPIC FOR 1966 MEETING OF CANADIAN COMMITTEE ON FATS AND OILS

The 1966 Meeting of the Canadian Committee on Fats and Oils will feature a symposium under the title:

Developments in the Production and Utilization of Fish Oils in Canada.

Dr. Robert Ackman, Fisheries Research Board, Halifax, is in charge of the arrangements and reports the following tentative program outline:

(a) Fish species, seasons, production methods of Canadian West Coast,

(b) Fish species, seasons, production methods of Canadian East Coast,

(c) Fatty acid composition,

(d) Problems of edible oils industry,

(e) Problems of fish oil producers.

The Symposium will be held in Ottawa on October 11, 1966, and the regular meeting of the Committee on October 12, 1966.

For further details, write to:

Dr. R.G. Ackman,
Fisheries Research Board of Canada,
Halifax Laboratory,
P.O. Box 429,
Halifax, N.S.

REASONABLE DAILY INTAKE OF FOODS AS USED BY THE FOOD AND DRUG DIRECTORATE

Dr. D.G. Chapman, Assistant Director-General, Foods,

Food and Drug Directorate, Department of National Health and Welfare

The value of a food as a source of vitamins depends not only upon the concentration of vitamins in that particular food, but also upon the amount of the food which is ordinarily consumed. In view of this, it is necessary to have available a figure which represents the amount of the food which is eaten.

While there may be available average per capita consumption figures for many foods, these are not always too helpful in calculating the quantity of vitamins which may be ingested by an individual who regularly eats a specific food in normal amounts. If a food is only consumed by a certain group of people in the population, the average per capita consumption figure, being calculated on the whole population, is not representative of the amount consumed by the smaller group.

Hence, in order to determine the contribution that any particular food makes as a source of vitamins, the Food and Drug Directorate has developed the concept of the "reasonable daily intake" for foods. Generally speaking, the "reasonable daily intake" may be considered to be one serving of a particular food. However, because some foods may be consumed at more than one meal, it is necessary to consider more than one serving as the "reasonable daily intake". Hence, the "reasonable daily intake" for bread has been established at 150 grams (5 slices), and for whole milk at 708 grams (3 cups).

The "reasonable daily intake" for butter and margarine has been set at 60 grams (4 squares).

In the Vitamin Section of the Food and Drug Regulations the amounts of the vitamins are specified which must be present naturally in a "reasonable daily intake" of a particular food before a claim may be made that the food is a good or excellent dietary source of the vitamin. Taking the above factors into account, whole wheat bread is a good source of thiamine and an excellent source of niacin, and butter an excellent source of vitamin A.

The Food and Drug Directorate is in a position to indicate what amount of any particular food constitutes a "reasonable daily intake" and whether or not claims may be made that the food is a good or excellent dietary source of vitamins.

MEASURING THE TEXTURE OF FOODS[1]

Peter W. Voisey

Engineering Research Service, Research Branch,
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Engineers and food technologists in the Department of Agriculture are co-operating to develop instruments for measuring the textural properties of foods. The object is to eliminate errors inherent in human evaluation of this factor; both in research and quality control. Ultimately, it may be possible to develop standards for food texture.

Texture of foods is complex and dependent upon physical properties of the product, such as its elasticity. Texture is an important criterion governing consumer acceptance from the standpoint of both handling and consumption. The approach to measuring food texture is generally as follows. First, the physical property to be measured must be determined. This is a particular property associated with the product, such as the softness of marshmallows or the 'spreadability' of butter. Second, the effect of variations in this property on human reaction must be evaluated, using a taste panel. Third, an instrument must be devised to measure the physical property by some mechanical means. Finally, the results from the taste panel and from the instrument must be compared. If the results are in agreement, the taste panel can be eliminated, and replaced by a direct mechanical measurement using a numerical index related to texture.

Measurement of texture is receiving increasing attention and a more fundamental approach has been made in recent years. In general, methods used to test engineering materials, such as steel, are being applied and engineering terminology, "stress", "strain" and "elastic modulus" are used to describe texture. The basic method is to apply a force which deforms the product recording both force and deformation during the process. This data provides information on the behaviour of the product, and in some cases fundamental properties can be determined. This behaviour, or property (physical constant), is related to texture and can be used to compare one product with another. The advantages of mechanical measurements are accuracy, reproducibility, and sensitivity. For example, changes in texture which cannot be detected by human evaluation can often be measured by machine.

[1]Contribution No. 99.

Foods exhibit two types of behaviour when deformed. First, behaviour independent of time, for example, force may be directly related to deformation in which case the product is elastic and acts similar to a spring. Second, behaviour dependent on time, for example, the product may continue to deform when a constant force is applied, in which case the stresses produced by the force are being dissipated as heat in the product. Most foods exhibit both types of behaviour. However, depending on the rate at which the force is applied one or other generally predominate; the combined behaviour being visco-elastic. In measuring food texture either one or the combination of both may be the behaviour governing human reaction to texture. For example, in pouring tomato ketchup, the viscous properties are apparent, whereas in biting celery the elastic properties produce the main effect. Thus, to measure food texture the instrument must apply force rapidly to measure elastic behaviour, or slowly to measure viscous and rheological behaviour.

For research, an instrument which measures a fundamental property is required, but this may not be suitable for the production line because of its complexity and problems in analysing the data. Instruments for the production line must be simple, rugged and produce results which can be quickly analysed. This requires a mechanism which will cut, squash or bend a sample, and produce a numerical index of texture. This has led to the development of numerous devices each designed for a specific type of product. These instruments in general do not measure fundamental properties but give indices which are related to the effect of one or more of these properties. These indices can only be used to compare different products on one instrument because different instruments of the same design may give different results unless the dimensions of the machine are standardized very precisely.

Some products, such as oils, can be evaluated using conventional instruments such as viscometers, which are well established for this purpose. Other products cannot be tested by available instruments, for example, gels or unctious foods such as butter and special apparatus must be developed for the purpose. Engineering Research Service has been developing such equipment for meats, vegetables and dairy products. Two of these instruments may prove useful in testing a wide range of solid, gel and unctious type foods.

One machine, developed for measuring the tenderness of meat, records the force required to cut a sample in half by a blade. It is currently in use evaluating tenderness of goose meat. However, the apparatus is sensitive enough to test many other products such as cheese and will evaluate the firmness or effort required to 'bite' through cheese. A second instrument was developed for measuring the firmness of Cottage cheese curds. The force required to drive a wire cutter through the cheese is recorded. The sample is held in a slotted container which allows passage of the wire cutter. Three-wire cutters produce more precise results than one or two wires because more of the sample is cut in each test. The same apparatus is also being used to evaluate the texture-temperature relationship of fats.

Butter or margarine stored at refrigerator temperatures is difficult to spread evenly until it reaches room temperature. The 'spreadability' of such fats at low temperatures can be modified by various processes to overcome this problem. Therefore, a rapid means of determining the spreadability-temperature relationship is useful. The wire cutter apparatus has proved useful for this purpose. Samples of butter with a modified consistency have been tested. The results show that the force on the cutter is sensitive to changes in texture. The relationship between texture and temperature can be rapidly determined by testing samples of the same fat at different temperatures.

Details of construction for these devices and more detailed information can be obtained from Engineering Research Service, Research Branch, Canada Department of Agriculture, Ottawa.

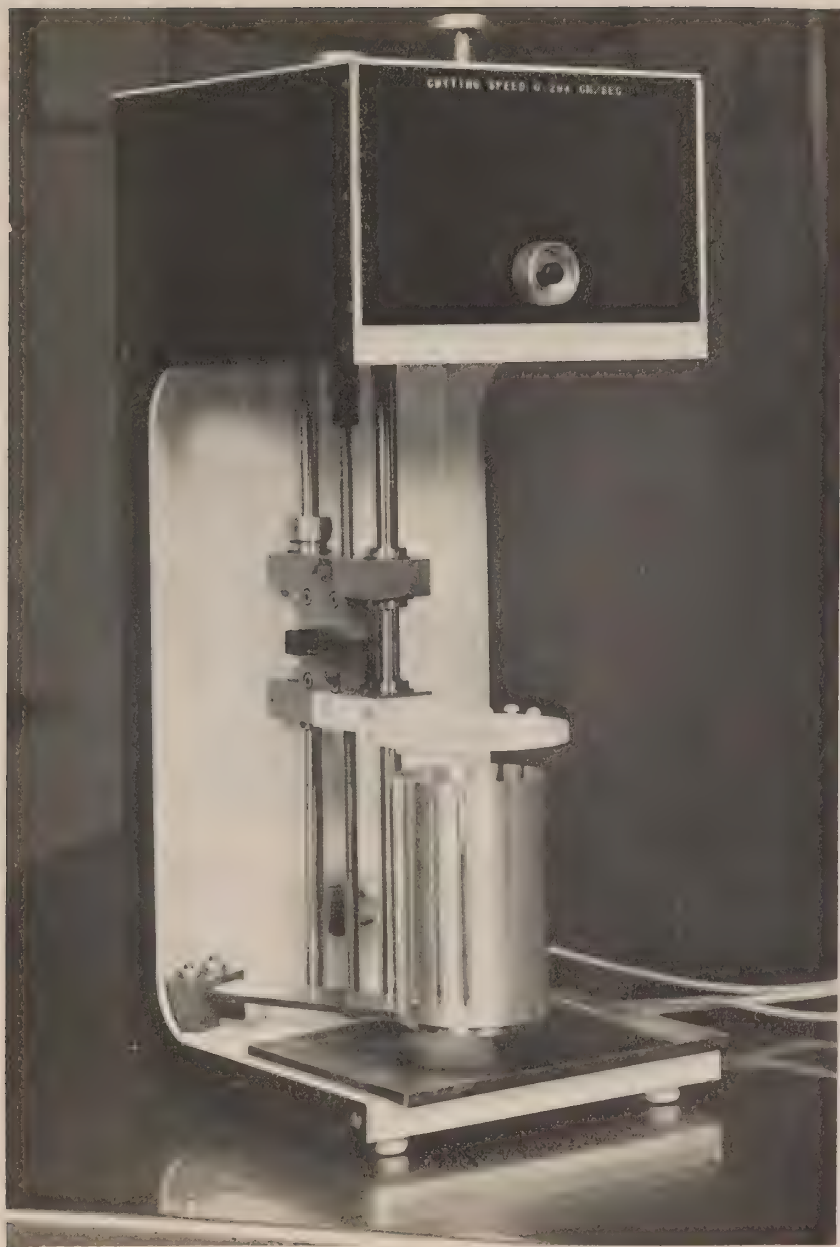


FIGURE 1

Instrument used to measure firmness in Cottage cheese curds and spreadability of butter

FIGURE 2

Instrument for measuring tenderness of meat, cheese and similar products.

FOREIGN INDUSTRIES REVIEW

(The information contained in the first two reports has been supplied by the Canadian Commercial Counsellors, Department of Trade and Commerce, in the Hague, Netherlands, and Stockholm, Sweden.)

The Dutch Fats and Oils Industry

The Netherlands, with a population of over 12 million people, has by tradition an important oilseed crushing industry and a large production of fats and oils. Today, the Dutch margarine, shortening and salad oil industry is modern, efficient and greatly automated.

As oilseeds production is negligible, the Dutch industry must buy its raw materials in the world market. It is free to purchase wherever and whenever it wishes. Since no import duties are levied on most oleaginous raw materials, Dutch crushers and producers of edible fats and oils often find themselves in a better position then processors in countries where oilseeds are grown under government protection.

Of a total volume of 794,000 tons of raw material (oil basis) processed in 1964, only 10.6 per cent or 84,000 tons came from domestic production. The total includes imports of fats and oils used for technical purposes, as well as fatty acids. About 60 per cent of total imports is in the form of fats and oils, and the remainder covers oilseeds, mainly soybeans, palm kernels, copra and flaxseed.

The Netherlands is a significant exporter of fats and oils. In 1964, exports totalled 315,000 tons (oil basis), of which vegetable oils, at 109,000 tons, were the principal item. Total exports amounted to 327,000 tons in 1962 and to 302,000 tons in 1963.

Dutch Imports of Oleaginous Raw Materials
(thousand short tons)

	1963		1964	
	As such	Oil Basis	As such	Oil Basis
Oilseeds (edible uses)	360	70	510	94
Vegetable Oils (edible)		53		54
Oilseeds (technical purposes)	56	19	77	26
Vegetable Oils (technical)		18		19
Vegetable fats (oilseeds)	276	153	286	158
Vegetable fats (as such)		83		80
Whale & fish oils		117		95
Animal fats		134		158
Fatty acids		14		20
Other		17		8
Total		678		712

Soybeans, copra, palm kernels and flaxseed accounted for the bulk of oilseed imports; palm oil and soybean oil for most of the vegetable fats and oils.

Industrial Capacity

At the end of 1964, there were 18 oilseed crushers and 24 refineries, of which 6 were equipped for hydrogenation. Most crushers are also refiners, and a number of companies are fully integrated to manufacture margarine, shortening and salad oils.

Margarine production amounted to 280,000 tons in 1964. Only 11,800 tons of this volume were exported.

It is estimated that at a stable per capita consumption and continued population growth, the 22 Dutch margarine producers will expand production at a rate of at least 3,300 tons per year. Total margarine consumption has increased by about 6.5 per cent since 1960.

Shortening production is increasing, so are consumption and exports. Of 54,000 tons produced for domestic consumption in 1964, 19 per cent of the fat was derived from animal sources (other than whale and fish), 81 per cent from vegetable oils, and a small quantity from whale.

Margarine varies greatly in quality, and some brands contain only vegetable oils. Salad oil for domestic consumption amounted to 30,000 tons in 1964.

Oilseed Crushings

(thousand short tons)

	(thousand short tons) 1962	1963	1964
Copra	128	132	140
Palm kernels	146	139	143
Peanuts	30	12	8
Soybeans	370	353	458
Flaxseed	73	57	74
Other oil seeds	12	12	3
Total	759	705	826
Quantity of oil obtained:	261	242	270

Consumption:

Per capita consumption of visible fats and oils has shown successive annual increases. A relatively strong rise was recorded in 1963, but this was entirely due to a larger availability of cheap cold storage butter, resulting from excess production. Per capita consumption of edible fats and oils amounted to 68.8 lbs. Margarine consumption has been rising steadily.

Per Capita Consumption of Visible Fats & Oils in the Netherlands

(pounds)

	1962	1963	1964
Butter	11.9	12.5	10.6
Margarine	43.1	43.6	44.2
Shortening	7.5	8.1	8.8
Salad Oils	4.4	4.6	4.8
Animal fats not included in above items	0.4	0.4	0.2
Total	67.3	69.2	68.6

Margarine and butter prices differ widely. A 250 gram package of good quality margarine costs about Fls. 0.45 retail, and fresh butter is exactly three times dearer at Fls. 1.35 to Fls. 1.37 per 250 gram

package. Shortening and salad oil consumption remain low. One reason for the difference in consumption figures is thought to be the use of margarine as a multipurpose product for cooking as well as a spread to replace butter. The greater part of the shortening is consumed by institutional custommers and the food industry (81%), and the remaining 19% is used for household purposes. It is believed that the same utilization applies to salad oils, where the bulk goes into salad dressings, mayonnaise and other food products.

Shortening and Salad Oil Consumption in the Netherlands

(short tons)

	1961	1962	1963	1964
Shortening:				
For household purposes:	9,400	9,100	9,300	10,500
For other purposes:	37,200	37,400	41,200	43,800
Total	46,600	46,500	50,500	54,300
Salad Oil:	24,800	25,600	28,100	29,800

The Swedish Fats and Oils Industry

Oilseed Production

Rapeseed accounted for over 80 per cent of a total oilseed production of about 200,000 tons in 1964/65. Over two-thirds of this was bought and crushed by the Swedish Extraction Association (Svenska Extraktions foreningen), which is owned by the main margarine manufacturers, in their plant at Karlshamn. Most of the remainder of the crop is exported.

Swedish Exports: (short tons)	1964	1965
Rapeseed:	53,600	80,800
Rapeseed oil:	18,100	9,750

Of the 53,000 tons of rapeseed oil produced in 1964, two-thirds was consumed in Sweden, practically all for margarine, and the remainder was exported. The margarine industry has undertaken to buy every year a certain proportion of the oilseed crop, amounting to more than a half. Household margarine in Sweden contains over 30 per cent of rapeseed oil. Sweden has only one crushing mill, the one at Karlshamn.

Margarine Industry

Four large manufacturers share 95 per cent of the market. Three companies account for 70 per cent of the output and market jointly through Margarinbolaget. The Co-operative Wholesale Society (KF) accounts for 25 per cent of the production with its new factory at Karlshamn.

Sales of margarine and related fats are given in the following table for the crop year ending August 31.

Swedish Margarine and Shortening Production

(thousand short tons)

Year Ending	Household Margarine	Bakery Margarine	Lard Substitutes, incl. shortening
1965	109	24	2.2
1964	103	25	3.2
1958	89	29	1.8
1939	57	9	5.7

For the crop year ended August 31, 1965, the production of salad and cooking oils was 2,900 tons, and of coconut fat 1,400 tons. Shortenings represent a minor part of vegetable oil consumption in Sweden, and margarine accounts for 93 per cent of vegetable oils used in Sweden.

Sweden enjoys a standard of living similar to Canada, and has experienced increasing affluence since the war. Per capita margarine consumption has increased from 20.7 lbs. in 1939 to an estimated 36.3 lbs. in 1965. Butter consumption rose from 24.4 lbs. in 1939 to 30.2 lbs. in 1950, but dropped again to an estimated 20.9 lbs. in 1965.

A spokesman for the Swedish margarine industry gave the following explanation for the upward trend of Swedish margarine consumption:

1) The continuous effort of the Swedish margarine industry to improve quality. Since 1960, premium priced margarines have witnessed a rapid growth, indicating that the quality argument outweighed the higher price.
2) A shift from a rural to an industrial society, affecting the consumer's attitude towards margarine.
3) The margarine industry, more than the dairy industry, has recognized the importance of marketing efforts.

Consumption of butter was 106,000 tons in 1950, and is now only 76,000 tons. Margarine consumption, on the other hand, has risen from 58,000 tons to 109,000 tons during the same period.

Margarine sells retail at 356 öre/kg, that is 34¢/lb., and costs almost exactly the same as in 1960–62. Butter, on the other hands, costs 20 per cent more today than it did in 1950, and over four times as much as margarine.

(NOTE: There is a fee charged by the government, so that domestic raw materials used in fats and oils production have a fixed cost, thus preventing margarine from becoming too cheap in relation to butter.)

United States Margarine Consumption Sets 10th Straight Record

The National Association of Margarine Manufacturers, in Washington D.C., reported that margarine consumption in 1965 registered a tenth consecutive annual record, reaching a total of 1,904 million pounds. Yearly use averaged at 9.8 pounds per person. Average retail price was 27.9¢ per pound, exactly 1¢ below the price for vegetable spreads 10 years ago.

Consumption of margarine, which is virtually equal to production, rose 2.4 per cent above the 1964 level. More than 1,535 million pounds of fats and oils were employed in the manufacture of margarine, composed as follows:

Soybean oil :	1,112 million pounds
Cottonseed oil:	114 million pounds
Corn oil :	161 million pounds
Lard & tallow :	46 million pounds
Total	1,433 million pounds

Lard and tallow figures were reported only since May 1965. The remaining 102 million pounds represent mainly peanut and safflower seed oil, and were withheld to avoid disclosing figures for indivi-

dual companies. According to the President of the Association, Mr. S. F. Riepma, the continuing introduction of new margarine products was the most striking feature of 1965. The industry's consumer oriented approach was claimed to result in a better table spread at a favourable price.

In 1965, 15 states acted to remove or modify restrictive statutes affecting margarine. Wisconsin still retains the ban on yellow margarine. In February Pennsylvania withdrew the last barriers to the sale and use of colored margarine.

CONVERSION FACTORS

OILSEEDS: Statutory Weight per Bushel and Average Volume per Short Ton

	Pounds	Cubic Feet
Flaxseed	56	45.9
Soybeans	60	42.8
Rapeseed	50	51.4
Sunflower Seed	30	85.7
Mustard Seed	–	51.4

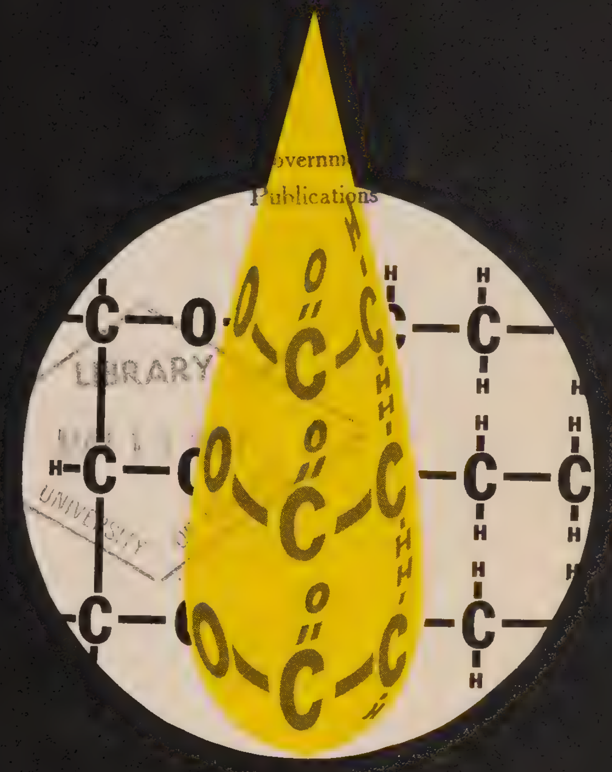
OILSEED PRODUCTS

	Extraction Rate	Yield Per Bushel	Weight of Gallon
	(Percent)	(Pounds)	(Pounds)
Flaxseed, Crude Oil	35.4	19.8	9.3
Linseed Meal	61.7	34.6	–
Soybeans, Crude Oil	17.7	10.6	9.2
Meal	80.0	47.3	–
Rapeseed, Oil	37.5	18.75	9.1
Meal	57.5	28.75	–
Sunflower Seed, Oil	33.0	10.0	9.2
Meal	33.0	9.3	–
Mustard Seed, Oil	19.0	–	–
Meal	70.0	–	–

Marine Oils: 1 Imperial gallon = 9.25 lbs.

Roger Duhamel, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1966

FATS AND OILS IN CANADA / SEMI ANNUAL REVIEW



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FATS & OILS IN CANADA

Semi-Annual Review

APRIL 1967

Prepared by: Edible Oils Section
Food Products Branch
Department of Industry
Ottawa, Canada.

Vol. 2, No. 1

INTRODUCTION

This is the third issue of "Fats and Oils in Canada", a semi-annual review, prepared by the Food Products Branch. It contains in one publication, statistical information of relevance to the fats and oils industry in Canada, as well as an interpretation of these data.

In addition, "Fats and Oils in Canada" reports on significant technical and economic developments in Canada and abroad which are likely to affect the Canadian industry.

The Canadian statistical data are based on material provided by the Dominion Bureau of Statistics, the Department of Agriculture, the Department of Fisheries, and the Department of Trade and Commerce. Additional statistics were obtained from a variety of domestic and foreign sources.

"Fats and Oils in Canada" is meant to be a working document for people concerned with the development of the Canadian fats and oils industry. Suggestions and comments on this publication are welcome.

If you wish to have your name or that of your company added to our mailing list, please write to:

Edible Oils Section,

Food Products Branch,

Department of Industry,

Ottawa 4, Canada.

April, 1967

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WORLD FATS AND OILS REVIEW

Survey of World Oils and Fats Position

A review given by Mr. C.A.C. de Boinville, president, International Association of Seed Crushers, at the annual meeting in Rome, Italy, in June 1966.

At the time of last year's Congress of the International Association of Seed Crushers in Lausanne, there was a growing shortage of oils and fats in Europe. Indeed, in the 12 months to April 1965, oils and fats prices in general rose by a third and reached their highest level since the Korean boom some 15 years earlier.

Underlying this situation has been the absence of any growth in oils and fats supplies from the main exporting countries. In 1963/64 these countries produced 15.4 million tons of oils and fats – calculated on an October-September basis – and although this was 300,000 tons higher than in the previous year, it was only sufficient to meet the growth in their own requirements. Fortunately heavy stocks had been accumulated in earlier years and with these being drawn upon to meet the needs of importing countries, the rise in the overall price level was limited to seven per cent. But in 1964/65 average prices rose by a further 21 per cent, since production in exporting countries failed to rise at all while their own consumption continued to rise and stocks were being rapidly depleted. It is a sobering thought that in the United States – which supplies over 90 per cent of the world's soybeans and oil – a delay of just three weeks in harvesting the 1965 crop was enough to cause soybeans supplies to run out and soya oil stocks to fall below a minimum working level. Only two years earlier it was customary, at this Congress and elsewhere, to refer to the burdensome level of United States oil stocks; yet over these two years it has been necessary to run them down by 620,000 tons in order to satisfy world requirements.

The supply situation has, of course, eased over the past 12 months and there is some prospect that the situation will ease further over the next 12 months. Production of oils and fats in exporting countries this season will be up by half a million tons and there are some early indications of a further rise in production in the 1966/67 season. A record United States soybean crop of 844 million bushels was harvested in 1965 against only 702 million bushels in the previous year and, to judge from declared planting intentions, the crop may reach 885 million bushels in 1966. We admittedly face a sharp drop in United States cotton oil production in 1967 of perhaps 140,000 tons, as a result of the reduced cotton acreage, but the rebuilding of herds, which cut United States pig slaughterings and lard production so much this year, promises a sharp rise in lard production in 1966/67, sufficient to compensate for the reduced output of cotton oil.

In countries other than the United States, large rapeseed crops were harvested in Western Europe, Canada and Poland; there were excellent groundnut crops in West Africa and Philippine copra production has reached record levels in recent months. Although the Congo's internal difficulties brought a sharp

drop in palm oil supplies this year, the rehabilitation of some plantations points to a recovery next year. At the same time, Malayan production will rise further as past increases in acreage come into production. With the continuing switch from rubber to palm plantations, Malaya will very soon be the largest single exporter of palm oil. Fish oil supplies rose sharply last year as Norwegian production more than doubled, but Antarctic whale oil production only reached 75,000 tons – it was 144,000 tons last year and over 300,000 tons five years ago. As in past years, the catch fell short of the much reduced internationally agreed catch quota of 4,500 blue whale units. Although concern at declining whale numbers has led to year-to-year reductions in the catch quota, the decline in numbers has always proceeded at a more rapid rate. Whale oil is now becoming of almost minor significance on world oils and fats markets.

We must not overlook the influence on world markets of the demand for oilcakes and meals. The output of mixed feeds has grown at an estimated six per cent per annum over the last 10 years, rising from a possible 60 million to a possible 110 million tons; much of this increase is due to the development of broiler feeds and poultry feeds generally which now account for about half of the mixed feeds produced in the world.

In 1964/65 world supplies of oilcakes and meals (including fish meal) came to 44 million metric tons – eight million, or a 20 per cent increase over 1960/61. Despite this large rise in output, prices for West European meal and cake rose in each successive year – the index being 96.1 in 1960/61 as against 118.2 in 1964/65. When one considers the record United States crop and crush of soybeans on the crop year 1965/66, the United States' expansion in production of five million tons in five years, the doubling of Peruvian fish meal, an increase of 3/4 million tons of oilcake production by the U.S.S.R. and of 1/2 million tons by India – it is extraordinary not only how this increased production has been absorbed, but also how price levels have remained firm. An example is American Soybean meal at Decatur – in 1960/61 it averaged $60 per short ton, in 1963/64 it went up to $70/71 and in 1965/66 should average out at $73/74.

These buoyant prices everywhere are a reflection of the world-wide rise in meat prices, a build-up of animal numbers, more intensive feeding and greater demand for cheaper forms of meat than beef, e.g. poultry meat. They will have an increasing effect on oilseed markets.

So, too, will the butter surplus problem. The tendency for butter production to outrun consumption in Europe is not new, but in the past the problem has often been solved by providence cutting back milk and butter production through the medium of adverse weather conditions.

So far, Germany, Belgium and Holland have been forced to sell sizeable quantities of butter at reduced prices on their own markets to cope with mounting stocks since the scope for new exports is distinctly limited – most developed countries restrict imports. The view may be held that fat and protein deficiencies in Asia provide an opportunity for a donations program. This, however, raises many questions such as whether the governments or their taxpayers are prepared to foot the bill. Since the developed countries already find difficulty in reaching their modest target, as agreed with the United Nations Conference on Trade and Development, of providing one per cent of their Gross National Product for aid purposes, it is all the more important that the aid provided should be in the most effective form. Dried milk powder is an obvious possibility but priority must first be given to cereals and fats that can be held in stock without cold storage.

TABLE 1

European Oils and Fats Supplies 1965

(thousands of tons)
(in terms of oil or fat)

	Indigenous Production	Retained Imports	Exports of Indigenous Produce	Total Supply	Estimated Stock Changes (1)	Estimated Consumption
E.E.C. Countries						
France	762	798	145	1,414	+ 28	1,387
West Germany	930	1,170	3	2,095	+ 13	2,081
Netherlands	225	408	40	594	+ 4	588
Italy................	688	535	24	1,199	-145	1,345
Belgium/Luxembourg .	197	217	23	391	+ 3	388
Total E.E.C.	2,802	3,128	235	5,693	- 97	5,789
E.F.T.A. Countries						
United Kingdom......	243	1,690	–	1,932	- 9	1,943
Denmark	298	81	163	217	+ 8	209
Norway	226	58	138	146	+ 32	115
Sweden	184	135	73	247	+ 12	232
Switzerland	52	116	2	165	+ 1	164
Austria	95	101	11	185	- 2	187
Portugal	105	118	9	214	+ 3	211
Finland (2)..........	107	17	18	106	- 7	113
Total E.F.T.A. ...	1,310	2,316	414	3,212	+ 38	3,174
Other Western Europe						
Republic of Ireland ..	86	24	28	83	–	83
Greece	199	24	11	212	- 31	243
Spain	316	369	31	655	-204	858
Total	601	417	70	950	-235	1,184
Grand Total	4,713	5,861	719	9,855	-294	10,147

Notes: (1) Differences between total supply & estimated consumption.
(2) Associate member.

Source: International Association of Seed Crushers.

CANADIAN SITUATION

TABLE 2

Canadian Oilseeds: Acreage, Yields, Production

(crop year)

Crop	Area			Yield per Acre		
	1964	1965	1966	1964	1965	1966(1)
	(thousands of acres)			(bushels)		
Flaxseed	1,978	2,320	2,070	10.3	12.6	11.4
Rapeseed	791	1,435	1,388	16.7	15.7	18.4
Soybeans	231	265	268	30.2	30.3	32.3
				(pounds)		
Sunflower Seed	79	67	41	394	430	737
Mustard Seed	74	157	166	645	811	871

Crop	Production			Oil Equivalent		
	1964	1965	1966(1)	1964	1965	1966(1)
	(thousands of bushels)			(millions of pounds)		
Flaxseed	20,313	29,254	23,616	402	580	468
Rapeseed	13,230	22,600	25,500	248	424	478
Soybeans	6,976	8,030	8,656	74	85	91
	(thousands of pounds)					
Sunflower Seed	30,900	29,225	29,550	10	10	10
Mustard Seed	47,750	127,370	144,600	9	24	27

(1) As indicated on the basis of conditions on or about October 15.

Source: DBS data.

Extraction Rates:	
Flaxseed	35.4%
Soybeans	17.7%
Rapeseed	37.5%
Sunflower Seed	33.0%
Mustard Seed	19.0%

The total Canadian oilseed acreage declined in 1966 by seven per cent from 4.2 million to 3.9 million acres. Favourable weather conditions, however, significantly improved the yields per acre of the edible oil crops, while flaxseed suffered initially in Manitoba as a result of heavy rains.

The combined edible oil equivalent of the three crops — rapeseed, soybeans and sunflower — rose from approximately 519 million pounds in 1965 to 579 million pounds in 1966. These figures indicate the quantity of oil potentially available from Canadian production. The individual disposition tables will place them in the proper perspective.

TABLE 3

Canadian Crushings of Vegetable Oilseeds and Production of Oil and Meal

(crop year)

(millions of pounds)

	1962-63	1963-64	1964-65	1965-66
Crushings				
Flaxseed	142	154	162	147
Soybeans	1,072	1,116	1,172	1,239
Rapeseed	81	79	108	187
Oil Production				
Flaxseed	49	53	56	51
Soybeans	184	193	201	205
Rapeseed	31	31	42	73
Meal Production				
Flaxseed	86	96	102	90
Soybeans	837	883	930	983
Rapeseed	48	46	63	108

Source: DBS, Coarse Grains Quarterly, Cat. No. 22-001.

Flaxseed crushings suffered a decline of seven per cent in 1965-66. Soybean crushings continued to increase moderately and rapeseed processing increased by 58 per cent to 187 million pounds. The small volume of sunflowers crushed in Western Canada is no longer being reported by DBS. The share of rapeseed in the edible sector amounts to 13 per cent of the crushing volume, but the rapeseed oil output amounts to 35 per cent of the soybean oil volume. The reverse relationship holds for meal production, where rapeseed meal accounts for only 11 per cent of the soybean meal volume.

Oil and Meal Yields

	1964–65		1965–66	
	— percentage —			
	Meal	Oil	Meal	Oil
Flaxseed..........	63.0	34.6	61.2	34.7
Soybeans..........	79.4	17.15	79.4	16.55
Rapeseed	58.3	38.9	57.8	39.1

SOYBEANS, SOYBEAN OIL, SOYBEAN MEAL

TABLE 4

Soybeans & Soybean Products – Canadian Supply and Distribution

(crop year)

	1961-62	1962-63	1963-64	1964-65	1965-66
Soybeans			(millions of bushels)		
Domestic Production	6.6	6.6	5.0	7.0	8.0
Imports	13.3	14.7	15.7	16.5	17.0
Supply	19.9	21.3	20.7	23.5	25.0
Domestic Crushings	16.9	17.9	18.6	19.5	20.7
Exports	3.7	2.4	1.6	3.2	2.2
Soybean Oil			(millions of pounds)		
Domestic Production	176.8	183.6	192.7	201.1	205.3
Imports	17.1	27.2	34.3	33.7	23.7
Supply	193.9	210.8	227.0	234.8	228.0
Exports	49.0	51.1	28.2	33.2	35.3
Apparent Disappearance	144.9	159.7	198.8	201.6	192.7
Soybean Meal			(thousands of tons)		
Domestic Production	396	419	442	465	491
Imports	247	282	203	261	266
Supply	643	701	645	726	757
Exports	192	233	211	267	242
Apparent Disappearance	451	468	434	459	515

Source: Based on DBS data.

Supply and Disposition of Soybeans and Soybean Products

Stock figures have not been included in the calculation of the supply and disposition of soybeans and soybean products since available data are incomplete and also do not indicate any trends affecting the supply and disappearance patterns. Soybean oil as well as meal stocks held in crushing plants are usually below five per cent of the annual production.

Soybean supply continued its increase in 1965/66 and reached a level of 25 million bushels. An increase in domestic soybean production by one million bushels did not prevent a slight rise in soybean imports. Domestic crushings were 1.1 million bushels higher than in 1964/65.

Domestic production of soybean oil also continued to rise slightly, while a drop by about one third in imports to 23.7 million pounds is responsible for the three per cent decrease in supply. The inability to satisfactorily market soybean oil domestically forced producers to increase their exports in 1965/66. Total domestic consumption of soybean oil showed a decline of approximately four per cent in 1965/66 compared with the previous year.

The Canadian supply of soybean meal also increased in 1965/66 by more than four per cent, largely as a result of better yield from domestic crushings. Exports declined by more than nine per cent, so that the apparent domestic consumption seems to have grown by 56,000 tons (12 per cent) to 515,000 tons.

These statistics do not yet indicate any permanent trend away from the traditional structure of this industry; the export of a major portion of the meal to Great Britain and the marketing of the oil domestically. However, the prospect of Great Britain joining the European Common Market may adversely affect the export of soybean meal to that country.

The oil, too, had to meet strong competition from imported oils during 1966, especially European rapeseed oil, which at times was sold in Canada for two to three cents per pound below the price of Canadian soybean oil. Large quantities of this oil as well as sunflowerseed and some peanut oil were able to enter Canada under these unusual price situations. In turn, Canadian soybean oil had to be exported to Europe to find a willing market.

TABLE 5

Canadian Soybean Prices(1)

(crop year)

(cents and eighths per bushel)

	1962–63	1963–64	1964–65	1965–66
August	242/5	275	276	283/6
September	248/2	281/6	298/2	272/7
October	252/1	207/1	303/6	273/4
November	255/2	295/3	312/7	264/1
December	256/4	292/1	318/3	283/3
January	269/1	288	324/1	298/5
February	276/1	276/4	328/6	302/7
March	275/1	275/3	322/1	297/4
April	273	272	320/1	309/5
May	276/6	267/3	302/5	321/7
June	283/3	265/6	312/2	346/6
July	281/7	266/7	304/3	362/1
Yearly average	265/7	279/3	310/4	301/2

(1) Buying prices, carlots, f.o.b. Chatham.

Source: DBS No. 22–001

TABLE 6

Canadian Imports of Soybeans

(crop year)
(short tons)

Origin	1961–62	1962–63	1963–64	1964–65	1965–66
Hong Kong	8	3	4	6	7
United States	399,862	441,327	469,685	493,702	511,726
Total	399,870	441,330	469,689	493,708	511,733
Total (millions of bushels)	13.3	14.7	15.7	16.5	17.0
Total Value (thousands of $)	34,565	35,587	49,868	49,369	50,960

Source: DBS, Trade of Canada.

TABLE 7

Canadian Exports of Soybeans

(crop year)
(short tons)

Destination	1961–62	1962–63	1963–64	1964–65	1965–66
United Kingdom	103,752	71,310	45,761	88,560	60,229
Denmark	–	–	–	–	–
Germany, West	4,667	1,979	2,581	2,849	3,971
Sweden	–	–	1	33	45
Switzerland	28	54	33	33	–
Republic of South Africa	–	–	–	198	279
United States	–	–	–	1	13
Netherlands	1,677	–	–	–	33
Australia	–	–	56	–	–
Total	110,124	73,343	48,432	95,373	64,570
Total, millions of bushels	3.67	2.44	1.61	3.18	2.15
Total Value (thousands of $)	9,943	7,182	4,786	10,370	6,874

Source: DBS, Trade of Canada.

TABLE 8

Canadian Imports of Soybean Oil

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
Germany, West	–	–	–	–	7
United States	8,531	13,592	17,131	16,864	11,832
Total	8,531	13,592	17,131	16,864	11,839
Total Value (thousands of $)	2,115	3,122	3,702	4,494	3,233

Source: DBS, Trade of Canada.

TABLE 9

Canadian Exports of Soybean Oil

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	22,061	25,163	14,082	15,858	17,672
Peru	–	(1)	–	(1)	2
United States	–	30	–	–	–
Netherlands	–	–	–	723	–
Spain	2,458	344	–	–	–
Total	24,519	25,537	14,082	16,581	17,674
Total Value (thousands of $)	5,846	5,356	3,085	4,304	4,596

(1) Less than 1 ton.

Source: DBS, Trade of Canada.

TABLE 10

Imports of Soybean Meal by Province

(calendar year)

	1963		1964		1965		1965 (Jan. to July)		1966 (Jan. to July)	
	Tons	Thousands of $	Tons	Thousands of $	Tons	Thousands of $	Tons	Thousands of $	Tons	Thousands of $
Nfld.	–	–	95	9	30	2	30	2	–	–
N.S.	2,380	210	160	14	175	14	120	9	934	89
P.E.I.	–	–	150	15	215	19	122	11	82	7
N.B.	860	69	935	72	870	73	596	49	473	50
Que.	83,080	6,605	58,220	4,520	80,185	6,568	42,480	3,388	36,559	3,454
Ont.	118,670	9,376	112,910	8,711	114,800	9,515	61,756	4,959	57,959	5,632
Man.	27,545	2,290	29,530	2,388	30,680	2,584	18,069	1,518	27,866	2,573
Sask.	490	42	375	32	640	58	229	22	3,882	356
Alta.	4,475	379	5,500	463	6,145	533	3,638	314	7,426	715
B.C.	19,325	1,640	15,040	1,220	15,250	1,350	7,625	644	16,970	1,610
Total	256,825	20,611	222,915	17,444	248,990	20,716	134,684	10,938	152,151	14,486

Source: DBS.

TABLE 11

Canadian Exports of Soybean Oil Cake and Meal

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	189,150	229,100	204,619	258,879	235,975
British Guiana	–	–	(1)	–	–
Barbados	–	120	–	150	240
Trinidad	–	–	15	30	76
Cuba	1,990	3,285	6,582	7,166	–
United States	18	55	20	135	103
Ireland	336	112	–	–	–
Venezuela	–	–	100	–	–
Australia	–	–	–	746	6,087
Leew. Wind. Is.	–	–	–	1	16
Jamaica	–	–	(1)	–	–
Netherlands Antilles	–	–	(1)	–	–
St. Pierre	–	–	(1)	–	–
New Zealand	4	–	–	–	–
Bermuda	8	2	–	–	–
Total	191,506	232,674	211,336	267,107	242,497
Total Value (thousands of $)	15,189	20,631	19,628	24,699	22,740

(1) Less than 1 ton.
Source: DBS, Trade of Canada.

TABLE 12

Canadian Imports of Miscellaneous Oilseed Cakes and Meals

(crop year)
(short tons)

	1961-62	1962-63	1963-64	1964-65	1965-66
Cottonseed Meal	1,243	506	1,840	5,196	1,127
Oilseed Cake and Meal, nes	303	79	166	64	166
Total	1,546	585	2,006	5,260	1,293
Total Value (thousands of $)	114	47	163	408	118

Source: DBS, Trade of Canada.

TABLE 13

Canadian Exports of Oilseed Cake and Meal

(crop year)
(short tons)

Destination	1961–62	1962–63	1963–64	1964–65	1965–66
United Kingdom	–	–	–	3,812	3,463
British Guiana	1	–	1	3	11
Leew. Wind. Is.	1	–	1	34	3
Trinidad	15	18	30	172	50
United States	–	–	5	27	12
Belgium/Luxemburg	50	–	–	–	–
Germany, West	100	–	–	–	–
Netherlands	33	–	–	–	–
Denmark	–	–	–	–	33
Barbados	–	–	–	5	–
Japan	–	530	1,102	–	–
Total	200	548	1,139	4,053	3,572
Total Value (thousands of $)	16	22	86	279	240

Source: DBS, Trade of Canada.

RAPESEED, RAPESEED OIL, RAPESEED MEAL

TABLE 14

Canadian Rapeseed: Supply & Disposition

(crop year)
(thousands of bushels)

	1962–63	1963–64	1964–65	1965–66	1966–67
Stocks, August 1	N.A.	600(1)	881(1)	1,514	3,366
Production	5,860	8,360	13,230	22,600	25,500
Total Supply	N.A.	8,960	14,111	24,114	28,866
Exports	5,800	5,308	9,276	13,632	
Stocks, July 31	N.A.	881	1,514	3,366	
Domestic Crushings	1,620	1,580	2,160	3,750	
Apparent Domestic Disappearance	N.A.	2,771	3,321	7,116	
	(dollars per bushel)				
Average Farm Price	2.05	2.52	2.74	N.A.	—

(1) Estimate

Source: DBS data; Board of Grain Commissioners.

Canadian Rapeseed: Supply and Disposition

The supply of rapeseed has increased in 1966 by 4.7 million bushels (20 per cent) to nearly 28.9 million bushels. It is expected that an expanding export market for rapeseed, particularly in Japan and Italy, as well as an increase in domestic crushing, will keep the carry-over at a desirable level. Overseas export clearances amounted to 3.1 million bushels on December 14, 1966, compared with 3.4 million bushels a year ago.

While domestic crushings rose by 74 per cent to 3.8 million bushels over the previous year, the proportion of the crop processed in Canada increased only slightly from 16.3 per cent to 16.6 per cent during the same period. This proportion will probably not change significantly during 1966/67.

The difference between the apparent domestic disappearance and the domestic crushing volume increased to 3.366 million bushels compared with 1.161 million bushels in 1964/65. Allowing about 2.4 million bushels for dockage, shrinkage and seed leaves a discrepancy of about one million bushels to be accounted for in 1965/66. An over-estimation of the crop was the most likely cause.

Canadian Rapeseed Council

Recognizing the growing importance of the rapeseed industry to the Canadian economy, the Barley and Oilseeds Conference in Winnipeg appointed a committee in the fall of 1966 to investigate the interest in the establishment of a Canadian Rapeseed Council. All sectors of the industry as well as

the various levels of government have been asked for comment. Should the replies be positive, steps willbe taken to initiate the establishment of such a Council, which is hoped to comprise all interested parties: rapeseed producers, traders, oil refiners, feed manufacturers, etc. The Council could play a vital role in the expansion of this major Canadian edible oilseed crop, valued now in excess of $60 million. Rapeseed exports in 1965/66 amounted to $36 million, and the value of domestically produced rapeseed oil and meal may be estimated to have been about $11 million. The anticipated growth potential is a multiple of the present production level and a Canadian Rapeseed Council could make a valuable contribution to a speedy and orderly development.

TABLE 15

Canadian Rapeseed Production

(crop year)

	1962-63	1963-64	1964-65	1965-66	1966-67
			(thousands of acres)		
Manitoba	32	52	84	145	158
Saskatchewan	167	210	303	555	620
Alberta	172	223	404	735	610
CANADA TOTAL	371	478	791	1,435	1,388
			(thousands of bushels)		
Manitoba	580	860	1,470	2,400	2,100
Saskatchewan	2,620	4,040	5,300	10,700	12,400
Alberta	2,660	3,560	6,460	9,500	11,000
CANADA TOTAL	5,860	8,360	13,230	22,600	25,500
CANADA TOTAL (thousands of tons)	147	209	331	565	637
			yield: bushels per acre		
Manitoba	18.0	16.7	17.5	16.6	13.3
Saskatchewan	15.7	19.2	17.5	19.2	20.0
Alberta	15.5	15.9	16.0	12.9	18.0
CANADA	15.8	17.5	16.7	15.7	18.4

Source: DBS Cat. Nos. 22-002 and 21-507.

Canadian Rapeseed Production

Rapeseed production in 1966 has been estimated at a record 25.5 million bushels, compared with 22.6 million bushels the year before and a 10-year average of 7.7 million bushels. Although the seeded acreage decreased by three per cent compared with 1965, excellent weather conditions in late summer boosted the crop by raising the average yields to 18.4 bushels per acre, 17 per cent higher than the average of 15.7 bushels in 1965.

The extractable oil equivalent of this crop amounts to 480 million pounds of rapeseed oil, or approximately 24 pounds per capita in Canada. Rapeseed is challenging now the role of flaxseed as the major oilseed crop of the Prairie provinces. Although the flaxseed acreage was still above two million, the estimated yield amounted to only 23.6 million bushels. It would be wrong, however, to conclude that rapeseed is competing with flaxseed for the same land. Rapeseed has found a useful place in the crop rotation system. It is grown to an increasing extent on stubble, and fertility scientists support this practice, particularly because of the increased yields resulting from the application of nitrogenous fertilizer.

Saskatchewan and Alberta continue to be the principal growing areas. Uncertain weather conditions are discouraging cultivation in the Peace River district, and the centre of rapeseed growing has moved south in Alberta. A trend towards growing rapeseed in more southern areas has also been been reported in Manitoba.

In two areas of the Prairie provinces outbreaks of fungus diseases occurred in 1966 and threatened to reduce yields. The Canada Department of Agriculture reported an outbreak of "white rust" in Northern Saskatchewan. It distorts the flowering parts. This disease can be controlled by the use of clean seed and by practising crop rotation. In Western Manitoba there was an outbreak of "stem and leaf spot", caused by seed-borne fungi. Crop rotation and treatment of seed from infected fields are the recommended measures of control.

The quality of the oil derived from the present rapeseed crop is considered the best in recent years. Excellent weather permitted the seed to mature well and very little of the objectionable green pigmentation, characteristic of immature seed, has been noticed in the oil.

Prices of No. 1 Canada rapeseed, basis in store Vancouver, averaged \$2.66 per bushel in 1965/66, compared with \$2.87 in 1964/65 and \$2.72 in 1963/64.

TABLE 16

Mean Quality Data for Survey Samples of Western Canadian Rapeseed, 1965 and 1966 Crops

	1965 Survey		1966 Survey		
	Oil Content %	Protein Content %	Oil Content %	Protein Content %	No. of Samples
Western Canada					
No. 1 Can. Rapeseed	43.6	39.9	44.9	39.1	260
No. 2 Can. Rapeseed	43.0	40.8	43.9	41.7	19
No. 3 Can. Rapeseed	44.2	39.9	46.2	37.8	2
All Grades	43.5	40.1	44.8	39.3	281

TABLE 16 (Concl.)

Mean Quality Data for Survey Samples of Western Canadian Rapeseed, 1965 and 1966 Crops

	1965 Survey		1966 Survey		
	Oil Content %	Protein Content %	Oil Content %	Protein Content %	No. of Samples
All Grades					
Manitoba	44.2	39.8	44.3	40.0	34
Saskatchewan	42.6	41.5	44.5	39.6	147
Alberta	44.1	38.8	45.5	38.5	100

Note: Both oil content and protein content of the oil-free meal are reported on a moisture-free basis.
Source: Grain Research Laboratory, Board of Grain Commissioners, Winnipeg.

Quality of 1966-67 Rapeseed Crop

The Board of Grain Commissioners has supplied the following preliminary information on the quality of the 1966 rapeseed production. The basic quality is very high, with the major degrading factor in grades No. 2 Canada and lower being admixtures of inseparable seeds. A survey of samples from country points in all three Prairie provinces indicates that about 80 per cent will grade No. 1 Canada, with the balance of the crop being about eight per cent No. 2 and No. 3 Canada grade and 12 per cent falling into Off Grade, Rejected and Sample.

There is apparently more wild mustard seed present in rapeseed this year, and this is no doubt in part due to the fact that some producers have seeded rape containing contaminating admixtures. (See Board of Grain Commissioners' statement below.)

Early-harvested rapeseed from areas in Southern Saskatchewan and Southwestern Manitoba, which suffered from extreme heat during the growing season, showed a distinctly reddish colour. This, however, represents only a small percentage of the crop and apparently has no serious effect on quality. Distinctly green seeds do not appear to be any serious problem in rapeseed this year.

The average oil content (dry basis) for all grades increased by 1.3 per cent from 43.5 per cent in 1965 to 44.8 per cent in 1966. The average protein content, however, dropped by 0.8 per cent to 39.3 per cent this season.

Wild Mustard Seed in Rapeseed

Statement of the Board of Grain Commissioners, Winnipeg, Manitoba, released December 13, 1966.

To safeguard foreign markets for Canadian rapeseed and to protect the domestic processors of this crop, the Board of Grain Commissioners has advised the grain trade that it intends to limit the amount of wild mustard seed permissible in grades Nos. 1, 2 and 3 Canada Rapeseed. It is expected that the limit will be set at a maximum of five per cent and will go into effect August 1, 1967. Prior to the 1966 harvest, the average amount of wild mustard seed contained in rapeseed received at country and terminal elevators was quite low. However, rapeseed harvested in 1966 shows a significant increase in wild mustard seed content. If this upward trend continues throughout another year of production, the Board feels that a serious loss of rapeseed markets could result, which would be to the detriment of producers in Western Canada.

Wild mustard seed cannot be distinguished from rapeseed by the naked eye. Accordingly, farmers who intend to plant rapeseed in 1967 are strongly urged to have non-pedigreed seed stocks tested for purity, or better still, to sow only pedigreed seed.

TABLE 17

Canadian Exports of Rapeseed

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	2,363	1,820	2,296	8,922	4,055
Belgium/Luxemburg	2,800	375	–	1,696	8,369
France	8,550	–	–	–	–
Finland	–	–	2,246	–	–
Germany, West	5,786	9,734	161	15,961	26,884
Italy	79,971	31,334	4,721	36,546	71,868
Netherlands	24,719	9,289	4,166	25,893	31,451
Algeria	12,225	13,888	–	–	–
Spain	–	–	41	1,034	109
India	–	–	–	2,800	–
Japan	28,493	77,637	108,273	89,187	169,037
Taiwan	–	–	5,227	1,213	–
United States	58	966	3,155	60	160
Czechoslovakia	–	–	–	15,183	–
Poland	–	–	–	9,921	–
Pakistan	–	–	–	22,462	19,841
Total Weight (short tons)	164,965	145,043	130,286	230,878	331,774
Total Weight (thousands of bushels)	6,599	5,802	5,211	9,235	13,271
Total Value (thousands of $)	16,611	13,372	14,514	27,548	36,039

Source: DBS, Trade of Canada.

Canadian Exports of Rapeseed

Rapeseed exports in 1965/66 increased by more than a 100,000 tons (44 per cent) compared with the previous year. The value of rapeseed exports rose by 31 per cent to $36 million. Japan's share increased from nearly 39 per cent to more than 51 per cent and accounts for 169,000 tons. According to a Japanese trade mission, which visited Canada in the late summer of 1966, a further substantial increase may be expected during the present crop year.

Italy also nearly doubled her purchases, which reached 72,000 tons in 1965/66. The shortage of olive oil is again inducing Italy to import large quantities of rapeseed, and Canadian producers are reported to have received orders which will maintain the present export volume to Italy. West Germany has also increased her purchases of Canadian rapeseed, despite the fact that German margarine manufacturers prefer other oils in their formulations. They may use the oil primarily in salad and cooking oils or even export it.

The United Kingdom has begun to import sizable quantities of rapeseed. Canadian rapeseed was apparently not sufficiently competitive, and Britain's requirements were largely met by France.

Exports to Pakistan include gifts made under the Colombo Plan. The most significant development apart from the steady growth of the Japanese market, is the fact that Western Europe now takes about 40 per cent of Canada's exports. Western Europe is traditionally a major oilseed and oilseed products importer. The new European Common Market support program for rapeseed may raise local production to some extent, but will not materially change the dependence upon imports. The interest in the improvement of rapeseed oil and meal quality is now widespread, and the reservations against their use are gradually being broken down. This combination of European emphasis on rapeseed production and the availability of Canadian supplies, should result in a considerable expansion of this market.

TABLE 18

Canadian Exports of Rapeseed Oil

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United States	465	127	196	–	2
Total	465	127	196	–	2
Total Value (thousands of $)	106	26	45	–	1

Source: DBS, Trade of Canada

The Zero-Erucic Acid Rapeseed Oil Situation

According to Dr. R.K. Downey, the strain of zero-erucic acid rapeseed which has been grown on an experimental scale in Saskatchewan in 1966, is derived from Brassica Campestris and is not yet satisfactory from the point of view of seed yield and oil content. Improved varieties are being developed and should be ready for farmer growing in another two years.

In 1966 the Saskatchewan Wheat Pool contracted with farmers to grow some of the new seed, although the seed is not yet licensed and still under the control of the plant breeder in the Department of Agriculture.

The Pool succeeded in multiplying about 80 bushels to 25,000 bushels. Since the seed had to be carefully kept separate from other rapeseed in order to avoid contamination at the farm level and in the plant, considerable expense was involved in handling the new seed. At present the Saskatchewan Wheat Pool has enough seed to grow 70,000 acres in 1967, equivalent to approximately 24 million pounds of oil, or 400 tank cars.

Canada Packers Limited has obtained a patent on an application of a process which slightly hydrogenates and subsequently winterizes rapeseed oil, involving an unexpectedly low loss upon winterization. Other commercially important applications have not yet become known, and consequently many firms have hesitated to commit themselves to the use of any considerable quantities of the zero-erucic acid rapeseed oil. Experimental testing will have to be continued in order to ascertain the advantages of the new oil. The plant breeders are also planning to develop strains low in linolenic acid content, whose enhanced stability would prove of benefit to the salad oil producers.

Companies interested in obtaining any quantities of zero-erucic acid rapeseed oil should contact:

Saskatchewan Wheat Pool,
Vegetable Oil Division,
P.O. Box 109,
Saskatoon, Sask.

SUNFLOWER SEED

TABLE 19

Canadian Sunflower Seed: Acreage, Production, Prices

(crop year)

(thousands of acres)

	1962-63	1963-64	1964-65	1965-66	1966-67(1)
Manitoba	20.5	37.0	48.0	48.0	32.0
Saskatchewan	–	3.5	23.0	16.5	6.1
Alberta	2.5	1.5	7.5	3.5	2.0
Canada, Total	23.0	42.0	78.5	68.0	40.1
		(Millions of pounds)			
Manitoba	15.4	35.0	25.2	26.4	25.6
Saskatchewan	–	3.3	3.5	2.5	3.1
Alberta	2.0	1.5	2.3	0.4	0.9
Canada, Total	17.4	39.8	30.9	29.2	29.6
		(Yield per acre, pounds)			
Manitoba	749	950	525	550	800
Saskatchewan	–	948	150	150	500
Alberta	800	1,025	300	100	450
Canada, Total	755	948	394	430	737
		(Average Farm Price, Cents per Pound)			
Canada, Total	5.3	4.5	4.9	N.A.	

(1) Preliminary, as of Oct. 15, 1966

Source: DBS Cat. No. 21-507 and 22-002.

Sunflower seed acreage declined in 1966 by 40 per cent to 40,100 acres from 68,000 acres the previous season. Adverse weather conditions of the two previous years had discouraged farmers. In Manitoba, seeding was delayed until the end of May, 1966, and heavy rains later drowned part of the harvest. Subsequent warm and frost-free weather greatly improved the yields, so that the total output exceeded the 1965 level.

Approximately one third of the crop consists of birdseed and confectionery varieties. The bulk of these types of seed is exported, mainly to the United States and West Germany.

Assuming an export volume of 10 million pounds in 1966/67, about 20 million pounds remain for oilseed crushing and may yield about seven million pounds of sunflowerseed oil.

While sunflowers grown in Manitoba are seeded in regular narrow rows, those grown in Saskatchewan and Alberta are mostly planted in wide rows, nine to 12 feet apart. The latter will yield less seed per acre. The reported averages of 450 to 500 pounds in the two latter provinces give the farmer a satisfactory return at 4.5 cents per pound, since the crop is grown on stubble and helps to conserve soil moisture.

It seems that the present Peredovik variety may gradually be displaced by earlier maturing varieties. A new Russian variety, Amaviric, has been tested in Western Canada and took 10 days less to mature.

The development of varieties of high oil content and better adaptation to the critical frost-free period has also encouraged sunflower cultivation in those areas of the Unites States bordering on Manitoba and Saskatchewan. About 250,000 acres may be grown there in 1967, and yields of 1,100 to 1,500 pounds per acre are anticipated.

The protein content of the meal derived from the Peredovik variety depends on the quality of the seed. If the seed is mature, it ranges above 40 per cent, while immature seed will produce a meal of about 35 per cent protein content.

TABLE 20

Canadian Exports of Sunflower Seed

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	–	–	1	1,238	7
Belgium/Luxemburg	–	–	52	28	–
Denmark	–	–	–	50	–
Germany, West	–	–	1,328	1,182	2,413
Netherlands	–	–	1,255	1,445	761
Sweden	–	–	–	(1)	–
United States	5,670	7,170	3,821	2,716	4,798
Republic of South Africa	–	–	(1)	–	–
Trinidad	–	3	–	–	–
Total	5,670	7,173	6,457	6,659	7,979
Total Value (thousands of $)	891	1,237	1,037	846	1,314

(1) Less than 1 ton.
Source: DBS, Trade of Canada.

Sunflower Production and Breeding in Russia

Academician A.Y. Panchenko of the All-Union Institute of Oilseed Crop Research, Krasnodar, presented a paper under this title at the Second International Sunflower Conference held in Morden, Manitoba, on August 17–18, 1966. Tracing the development of sunflower growing in the USSR, Dr. Panchenko stated that in 1966 the seeded acreage is expected to be around 12.3 million acres. Rapeseed, mustard, soybeans and other oilseed crops are grown on another 3.7 million acres. Sunflowers are grown across the country from the Carpathians to Lake Baikal. In 1965 the USSR produced about 2.2 million tons of vegetable oils and sunflower oil accounted for 1.76 million tons of the total. It is the country's major edible vegetable oil. About 1.87 million tons of sunflower meal were produced in the same year. The hulls are utilized in the production of ethanol, furfurol and yeast.

The increase in acreage and yield is illustrated in the following table:

Seeded Acreage and Sunflower Yield in the USSR

(Seeded acreage in thousand acres; yield in pounds per acre)

	Acreage				Yield			
Area	1913	1940	1960	1964	1913	1940	1960	1964
Total USSR	2,420	8,750	10,370	11,400	–	660	840	1,170
N. Caucasus	866	1,957	2,514	2,660	–	885	893	1,150
Volga Area	487	1,940	1,713	1,930	–	295	544	964
Central Black Soil Region	716	1,180	958	1,102	–	660	830	1,213
Moldavia	25	440	568	553	–	812	1,302	1,339
Ukraine	188	1,778	3,720	4,340	–	1,178	982	1,358

Since 1940 the acreage has increased by about 30 per cent and the average yield of seed per acre has risen by 77 per cent during the same period.

Dr. Panchenko described the aims pursued by the sunflower breeders at the Krasnodar institute. The development of broom-rape resistant varieties occurred during the nineteen thirties and resulted in a significant yield improvement. Attempts to breed varieties having a higher oil content remained without appreciable results for many years until the work of Academician Pustovoit started to make progress in 1927.

Stages of Breeding High Oil Sunflower Varieties in the USSR

Year	Name of Variety	% Oil, dry basis
1913	Local varieties	33
1927	Kruglik A–41	36
1935	VNIIMK 3519	43
1953	VNIIMK 6540	46
1955	VNIIMK 8931	49
1958	Peredovik	51
1964	VNIIMK 309	54

Present work aims for a 57 per cent oil content. So far the results also indicate an increase in yield.

The characteristics of the new sunflower varieties cultivated in the USSR were summarized by Dr. Panchenko in the following table:

Characteristics of Sunflower Varieties Cultivated in the USSR, Data of Competitive Variety Testing, Krasnodar, 1962-65

Varieties	Growing Period Days	% husk	% oil dry kernel	% oil dry seed	Seed Yield lbs. per acre	Oil Yield lbs. per acre
VNIIMK 6540	91	22.7	63.5	50.4	2300	1030
Peredovik	92	22.1	63.5	50.9	2275	1024
VNIIMK 8931	92	22.7	63.2	50.4	2295	1021
Armavirsky 3497	93	22.7	62.8	50.0	2285	1020
VNIIMK 1646	92	23.8	62.5	49.1	2265	986

The Russian sunflower breeders expect that the husk content will be further reduced to 19–20 per cent, and that the oil content of the seed (dry basis) will be about 54 per cent. A new variety, N25987, showed these characteristics in 1964 and 1965. It has an average growing period (time of emergence to time of harvest) of 90 days and yielded an average of 2,740 lbs. of seed per acre.

The development of oil yields in commercial crushing mills in the USSR were presented by Dr. Panchenko in the following table:

Oil Content of Commercial Sunflower Seeds and Sunflower Oil Yield in the USSR, (Basis 12% moisture)

Year	% Oil Content of Seed	% Oil Yield
1940	28.6	25.4
1950	30.4	28.0
1960	39.8	37.9
1961	40.3	38.4
1962	41.1	39.2
1963	42.2	40.4
1964	43.7	42.0
1965	44.04	42.51

MUSTARD SEED

TABLE 21

Canadian Mustard Seed Production

(crop year)

	1962-63	1963-64	1964-65	1965-66	1966-67
			(thousands of acres)		
Manitoba	10.0	20.0	10.0	19.0	24.0
Saskatchewan	49.0	63.0	29.0	58.0	52.0
Alberta	44.0	72.0	35.0	80.0	90.0
Canada, Total	103.0	155.0	74.0	157.0	166.0
			(millions of pounds)		
Manitoba	7.2	15.5	6.8	16.2	16.8
Saskatchewan	27.0	61.7	18.0	49.3	46.8
Alberta	23.5	61.2	23.0	61.9	81.0
Canada, Total	57.7	138.4	47.8	127.4	144.6
			(yield per acre, pounds)		
Manitoba	720	775	675	850	700
Saskatchewan	551	980	621	850	900
Alberta	534	850	657	774	900
Canada, Total	560	893	645	811	871

Source: DBS Cat. Nos. 21-507 and 22-002.

TABLE 22

Canadian Exports of Mustard Seed

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	1,017	1,124	2,229	3,209	2,016
Belgium/Luxemburg	1,706	2,580	3,621	3,028	5,964
Germany, West	791	1,562	1,441	2,247	1,987
Italy	27	6	39	33	39
Netherlands	452	1,092	2,316	6,304	9,369
Sweden	2	–	–	3	22
Switzerland	52	95	108	–	355
Japan	3,920	4,883	7,222	5,220	6,610
Peru	–	–	5	17	22
United States	4,488	6,547	9,777	10,912	16,973
Trinidad	–	2	3	–	–
Australia	3	–	–	–	–
France	–	–	–	–	827
Total	12,458	17,891	26,761	30,973	44,184
Total Value (thousands of $)	1,656	2,180	3,005	3,844	5,260

Source: DBS, Trade of Canada.

Comments on the Canadian Mustard Seed Crop.

The area grown to mustard seed in Canada rose by six per cent to 166,000 acres in 1966, the largest on record. Average yields increased by seven per cent to 871 pounds per acre, and total production is expected to amount to 144.6 million pounds, 14 per cent above the 127.4 million pounds produced in 1965.

The export volume climbed by 43 per cent to a record 44,000 tons compared with 31,000 tons in 1964/65. The export value rose by 37 per cent from $3.8 million to $5.3 million. The United States, the Netherlands, Japan and Belgium continued to be Canada's best customers. Since 1961/62, the export of mustard seed has more than tripled, but bears little relationship to crop production.

FLAXSEED, LINSEED OIL, LINSEED MEAL

TABLE 23

Canadian Flaxseed: Supply & Disposition

(crop year)

	Average 1958-62	1962-63	1963-64	1964-65	1965-66	1966-67
			– thousands of bushels –			
Stocks, August 1	5,969	5,269	3,988	6,551	7,141	10,958
Production	18,525	16,042	21,176	20,313	29,254	23,616
Imports	45	1	65	6	–	–
Total Supply	24,539	21,312	25,229	26,870	36,395	34,574
Exports	12,985	12,566	13,638	14,346	18,936	
Stocks, July 31	5,637	3,988	6,551	7,141	10,958	
Domestic Disappearance	5,917	4,758	5,040	5,383	6,501	
Domestic Crushings	–	2,529	2,750	2,901	2,631	
			– dollars per bushel –			
Average Farm Price (all grades)	2.96	3.06	2.91	2.94	–	

Source: DBS Cat. Nos. 21-507 and 22-002 and other data.

TABLE 24

Canadian Flaxseed Prices(1)

(crop year)
(cents and eighths per bushel)

	1962-63	1963-64	1964-65	1965-66
August	368	319/3	331/1	307/2
September	359/6	321/1	324/4	314/1
October	338	318/3	318/4	306/3
November	324/1	316	315/2	293/3
December	320/7	316/1	314/1	292/5
January	324/3	322/4	315	299
February	327/4	322/4	323/1	303/3
March	331/4	323/2	324/7	297/7

TABLE 24 (Concl.)

Canadian Flaxseed Prices(1)

(crop year)

(cents and eighths per bushel)

	1962-63	1963-64	1964-65	1965-66
April	331/3	316/2	321/6	296/3
May	334/1	314	324/5	292/6
June	329	318/2	319/2	294
July	331	328	312/3	295/7
Yearly average	335	319/6	320/3	299/3

(1) Winnipeg Grain Exchange No. 1 C.W. Flaxseed, basis Fort William-Port Arthur.

Source: DBS No. 22-001

TABLE 25

Canadian Flaxseed Production

(crop year)

	1962-63	1963-64	1964-65	1965-66	1966-67
			(thousands of acres)		
Quebec	25	32	36	28	19
Ontario	21	23	24	24	19
Manitoba	667	820	1,025	1,350	1,220
Saskatchewan	389	506	521	560	475
Alberta	340	303	370	355	334
British Columbia	2	1	2	3	3
Canada, Total	1,445	1,682	1,978	2,320	2,070
			(millions of bushels)		
Quebec	0.4	0.5	0.5	0.4	0.3
Ontario	0.4	0.4	0.4	0.4	0.3
Manitoba	7.8	9.3	10.6	16.2	11.0
Saskatchewan	4.1	7.3	4.5	7.3	6.7
Alberta	3.4	3.7	4.3	4.9	5.3
British Columbia	0.02	0.01	0.02	0.04	0.04
Canada, Total	16.0	21.2	20.3	29.3	23.6
			(yield per acre, bushels)		
Quebec	14.1	14.2	14.3	15.7	15.4
Ontario	16.9	17.9	16.3	15.8	14.8
Manitoba	11.7	11.3	10.3	12.0	9.0
Saskatchewan	10.5	14.4	8.6	13.0	14.1
Alberta	10.0	12.2	11.6	13.8	15.9
British Columbia	10.5	7.9	8.3	11.7	12.0
Canada, Total	11.1	12.6	10.3	12.6	11.4

Source: DBS Cat. Nos. 21-507 and 22-002.

TABLE 26

Canadian Exports of Flaxseed

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	128,368	135,092	132,245	135,666	129,910
Ireland	–	–	–	1,008	–
Belgium/Luxemburg	18,652	14,732	9,368	11,201	34,399
Finland	–	2,010	2,475	2,492	2,993
France	20,350	18,442	18,958	14,311	9,214
Germany, West	7,759	13,756	24,206	25,298	34,227
Germany, East	–	5,591	4,760	–	4,492
Greece	1,137	1,652	2,602	–	112
Italy	1,109	1,120	–	1,077	831
Netherlands	42,376	27,345	41,326	56,086	92,522
Norway	4,010	20,004	7,489	7,814	10,299
Portugal	6,451	1,125	6,021	5,310	2,324
Spain	10,159	1,579	12,355	13,992	23,277
Czechoslovakia	3,020	1,430	4,339	6,753	11,440
Yugoslavia	–	–	3,528	9,921	35,673
Israel	–	2,896	2,353	4,698	3,157
Japan	92,741	94,286	110,410	112,898	122,825
Peru	–	–	–	2	–
Trinidad	–	2	(1)	–	–
United States	1	71	12	1	–
Morocco	–	–	2,264	–	–
Korea	–	–	–	661	6,679
Australia	–	224	–	–	–
Switzerland	–	233	–	–	–
Total	336,133	331,590	384,711	409,189	524,374
Total Value (thousands of $)	44,640	40,776	45,087	48,050	57,917

(1) Less than 1 ton.
Source: DBS, Trade of Canada.

TABLE 27

Average Quality Data for Grades of Flaxseed for Western Canada, 1966 Crop

	Oil Content		Iodine Value		Protein Content		
	Mean %	Range %	Mean	Range	Mean %	Range %	No. of Samples
			—Wijs Units—				
Western Canada							
No. 1 C. W.	43.2	38.5-48.9	192	182-200	41.2	33.2-48.5	376
No. 2 C. W.	42.5	39.1-44.0	192	182-200	41.9	37.3-46.8	18
No. 3 C. W.	42.4	40.5-43.8	191	186-195	42.3	39.3-46.8	7
All Grades..........	43.1	38.5-48.9	192	182-200	41.2	33.2-48.5	401
All Grades							
Manitoba	43.0	38.5-45.3	192	182-200	41.0	33.2-47.6	225
Saskatchewan.......	43.3	40.7-46.2	192	182-200	42.3	35.6-48.5	110
Alberta	43.3	39.1-48.9	192	185-200	40.6	37.3-47.3	66

NOTE: Both oil content and protein content of the oil-free meal are reported on a moisture-free basis.
Source: Grain Research Laboratory, Board of Grain Commissioners, Winnipeg.

TABLE 28

Canada: Supply & Disposition of Linseed Oil and Meal

(crop year)

	1961-62	1962-63	1963-64	1964-65	1965-66
Linseed Oil			(millions of pounds)		
Domestic Production	47.9	49.1	53.2	55.7	51.4
Exports	8.9	8.3	11.8	26.4	11.3
Domestic Disappearance...........	39.0	40.8	41.4	29.3	40.1
Linseed Meal			(thousands of tons)		
Domestic Production	42.9	43.1	47.8	50.9	44.9
Exports	12.6	13.4	11.4	23.4	15.2
Domestic Disappearance...........	30.3	29.7	36.4	37.5	29.7

Source: Based on DBS data.

TABLE 29

Canadian Exports of Linseed Oil

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	4,411	4,110	5,401	13,178	5,630
Syria	6	–	–	5	–
Nigeria	–	–	–	5	–
Peru	–	2	(1)	3	–
Venezuela	12	16	24	24	–
Bermuda	2	(1)	(1)	2	–
British Honduras	(1)	–	(1)	–	–
Barbados	10	9	5	5	3
Jamaica	–	–	–	(1)	–
Leew.-Wind. Is.	–	(1)	(1)	(1)	(1)
Cuba	–	–	441	–	–
Neth. Ant.	2	2	2	–	(1)
United States	16	–	–	(1)	–
Colombia	12	–	–	–	–
Ecuador	–	–	–	–	1
Bahamas	–	–	–	(1)	–
Honduras	–	1	1	–	–
Total	4,471	4,140	5,874	13,222	5,634
Total Value (thousands of $)	1,232	1,049	1,360	3,165	1,213

(1) Less than 1 ton.

Source: DBS, Trade of Canada.

TABLE 30

Canadian Exports of Linseed Oil Cake and Meal

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	8,962	11,086	9,351	20,271	13,368
Ireland	–	–	–	1,046	113
British Guiana	251	165	195	157	99
Barbados	–	89	44	21	5
Leew. Wind. Is.	127	102	132	92	140
Trinidad	884	983	937	748	749
United States	2,376	955	636	1,022	684
Venezuela	–	–	105	–	–
Netherlands Antilles	–	–	1	–	–
British Honduras	1	–	–	–	–
Cuba	–	5	–	–	–
Total	12,601	13,385	11,401	23,357	15,158
Total Value (thousands of $)	853	1,127	1,051	1,904	1,237

Source: DBS, Trade of Canada.

Canadian Flaxseed, Linseed Oil and Meal Situation

Flaxseed

Flaxseed production declined by 19 per cent from 29.3 million to 23.6 million bushels (660,000 tons) in 1966. The decline was due primarily to an 11 per cent reduction in acreage to 2.1 million acres and also to a decrease in yield per acre from 12.6 to 11.4 bushels. However, this year's output is still 14 per cent above the 1955–64 average of 20.7 million bushels. Adverse weather conditions reduced the yield per acre in Manitoba, the principal growing area, while favourable conditions raised the yield in Saskatchewan and Alberta.

The average price for flaxseed dropped from $3.20 per bushel in 1964/65 to $2.99 in 1965/66. "Oil World" estimates that world production of flaxseed has declined during the present crop year by 17.5 per cent from 3.73 million tons to 3.08 million tons. Export demand can, therefore, be expected to remain strong, preventing further price declines.

The quality of this season's flaxseed crop surpasses that of last year. More than 93 per cent of all samples graded No. 1 C.W. flaxseed and compared favourably with 1964/65; No. 1 C.W.: mean oil content, 43.6 per cent (42.7 per cent), mean iodine value 192 (187), mean protein content, 41.2 per cent (42.0 per cent). As in all crops this year, there were exceptionally heavy weed infestations as a result of difficulties experienced by producers in applying weed control practices. The major problem in flaxseed came from Smartweed, commonly referred to as Lady's Thumb seed.

The total flaxseed supply in 1965/66 amounted to 36.4 million bushels, nearly 10 million more than the previous season. Increased exports from 14.3 to 18.9 million bushels kept the rise in carry-over down to 11 million bushels. Domestic crushings actually declined from 2.9 to 2.6 million bushels. Since the 1966 crop is only 23.6 million bushels, the total supply of flaxseed on August 1, 1966 rose to only 34.6 million bushels. Total export clearances of flaxseed, as reported on December 14, 1966 by the Board of Grain Commissioners for the current year amounted to 8.3 million bushels as compared with 7.6 million at a similar date last season.

Canadian exports of flaxseed rose from 409,000 tons (14.3 million bushels) in 1964/65 to 524,000 tons (18.9 million bushels) in 1966, an increase of 28 per cent. The United Kingdom, Japan and the Netherlands jointly purchased two thirds of Canada's exports.

Linseed Oil and Meal

Linseed oil production declined somewhat in 1965/66, and only 11.3 million pounds were exported, virtually all to the United Kingdom. As a rule, the volume of linseed oil carried over does not change greatly, but present stocks may be higher than usual.

Linseed meal production and exports also declined in 1965/66. Great Britain imported about 7,000 tons less than in 1964/65 and remained Canada's major customer. An expansion of exports of linseed meal into the lucrative eastern United States market is hampered by a $6 per ton import duty.

CANADIAN TRADE IN SPECIFIED EDIBLE VEGETABLE FATS AND OILS

TABLE 31

Canadian Imports of Cocoa Butter

(crop year)

(thousands of pounds)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	4,048	3,022	3,264	2,151	2,068
Germany, West	1	37	14	29	6
Netherlands	1,303	1,298	2,322	1,313	1,269
Ghana	1,568	3,512	7,298	6,996	10,106
Communist China	–	–	–	45	–
Jamaica	430	422	481	101	112
Trinidad and Tobago	50	118	100	100	50
United States	193	269	56	23	9
Italy	229	761	419	–	–
Poland	–	–	–	42	–
French Equatorial Africa	22	–	–	–	–
Spain	–	–	33	–	–
Cameroons	–	176	44	–	–
Brazil	2,434	3,072	99	–	55
Costa Rica	–	19	–	–	–
Dominican Republic	180	111	–	–	–
Ecuador	26	–	–	–	–
Venezuela	33	–	–	–	–
Ireland	40	–	–	–	–
Total	10,557	12,817	14,130	10,800	13,675
Total Value (thousands of $)	5,885	7,350	8,360	5,925	6,572

Source: DBS, Trade of Canada.

TABLE 32

Canadian Imports of Coconut Oil

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	2	1	1,597	3,119	1,326
Germany, West	2	1	3	3	2
Ceylon	23,071	14,444	12,902	9,278	4,601
Malaysia	4,295	6,559	3,881	4,663	11,890
Philippines	336	560	–	1,710	804
Australia	–	–	–	–	751
Fiji	–	15	2	17	11
United States	714	486	1,162	1,600	1,920
Ireland	2	2	–	–	–
Netherlands	2	–	–	–	–
Total	28,424	22,068	29,547	20,390	21,305
Total Value (thousands of $)	5,638	4,614	4,901	6,091	6,280

Source: DBS, Trade of Canada.

TABLE 33

Canadian Imports of Corn Oil(1)

(crop year)
(short tons)

Origin	1964-65	1965-66
United Kingdom	1,248	334
United States	6,784	8,321
Netherlands	551	981
Total	8,583	9,636
Total Value (thousands of $)	2,363	3,532

Source: DBS, Trade of Canada.

(1) Until December 1963 corn oil was included with Class No. 1620 Vegetable Oils Crude and Refined, nop.

TABLE 34

Canadian Imports of Cottonseed Oil

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	1,498	1,215	2,162	–	–
United States	15,627	15,052	17,725	20,409	24,584
Argentina	–	985	–	–	–
Netherlands	–	–	–	–	875
Total	17,125	17,252	19,887	20,409	25,459
Total Value (thousands of $)	4,621	3,949	4,512	5,243	6,758

Source: DBS, Trade of Canada.

TABLE 35

Canadian Imports of Olive Oil

(crop year)
(short tons)

Origin	1961–62	1962–63	1963–64	1964–65	1965–66
France	28	54	24	73	47
Greece	104	249	63	147	168
Italy	879	539	301	457	422
Portugal	73	44	90	114	111
Spain	715	506	717	842	640
Israel	(1)	–	(1)	(1)	–
Turkey	–	5	–	5	5
United States	56	114	57	123	85
Tunisia	26	–	–	24	–
Switzerland	–	–	(1)	–	–
Cyprus	–	50	–	–	–
Total	1,881	1,561	1,252	1,785	1,478
Total Value (thousands of $)	1,099	1,095	841	1,230	1,088

Source: DBS, Trade of Canada.

(1) Less than 1 ton.

TABLE 36

Canadian Imports of Palm Oil(1)

(crop year)
(short tons)

Origin	1961–62	1962–63	1963–64	1964–65	1965–66
United Kingdom	1,159	11	–	–	–
Malaysia	20,249	11,564	8,694	9,958	10,514
United States	1,248	128	21	–	–
Congo	47	–	–	–	–
Netherlands	1	–	–	–	–
Total	22,704	11,703	8,715	9,958	10,514
Total Value (thousands of $)	4,584	2,181	1,737	2,245	2,293

(1) Includes palm kernel oil until December 1961.

Source: DBS, Trade of Canada.

TABLE 37

Canadian Imports of Palm Kernel Oil (1)

(crop year)
(short tons)

Origin	1962-63	1963-64	1964-65	1965-66
United Kingdom	2,890	3,765	3,322	2,808
Netherlands	27	91	215	131
Congo (Leopoldville)	–	–	258	276
United States	–	15	61	61
Nigeria	–	–	410	2,604
Ireland	3	–	–	–
Total	2,920	3,871	4,266	5,880
Total Value (thousands of $)	727	1,076	1,324	1,858

(1) Included with Palm Oil until December 1961.
Source: DBS, Trade of Canada.

TABLE 38

Canadian Imports of Peanut Oil

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	4,494	1,531	1,142	46	616
France	6	36	13	28	23
Nigeria	1,247	6,102	6,457	1,800	7,681
Hong Kong	68	53	74	60	69
United States	182	883	952	2,201	1,459
Republic of South Africa	1,032	693	335	–	–
Total	7,029	9,298	8,973	4,135	9,848
Total Value (thousands of $)	3,666	2,388	2,306	1,248	2,835

Source: DBS, Trade of Canada.

TABLE 39

Canadian Imports of Vegetable Oils and Fats

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	4,822	558	3,043	125	9
Austria	(1)	4	7	5	6
Denmark	–	–	6	8	9
France	–	–	679	(1)	–
Germany, West	8	1	310	1,129	1,630
Netherlands	231	3,561	2,926	343	6,372
Sweden	832	35	135	564	863
Hong Kong	11	4	9	5	5
Japan	3	4	2	3	3
United States	1,473	3,447	2,295	702	543
Belgium/Luxemburg	278	–	224	–	–
Republic of South Africa	1,042	350	–	–	–
India	1,154	(1)	–	–	–
Colombia	55	–	–	–	–
Total	9,909	7,964	9,636	2,884	9,440
Total Value (thousands of $)	3,656	2,506	2,644	874	2,488

(1) Less than 1 ton.
Source: DBS, Trade of Canada.

TABLE 40

Canadian Exports of Vegetable Oils and Fats

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
Germany, West	–	–	18	3	–
Republic of South Africa	–	–	(1)	(1)	–
Japan	73	27	55	–	–
British Guiana	(1)	2	4	6	18
Bermuda	(1)	(1)	1	20	–
Barbados	–	–	19	12	18
Jamaica	(1)	1	(1)	–	1
Leew. Wind. Is.	(1)	1	1	2	5
Trinidad and Tobago	–	1	1	3	7
St. Pierre	–	–	–	(1)	–
United States	231	579	226	236	282
Bahamas	(1)	–	–	–	1
Cyprus	–	–	–	–	(1)
Australia	–	–	–	–	11
British Honduras	–	–	–	–	2
Cuba	–	–	–	2	2
United Kingdom	53	223	–	–	–
France	193	177	19	–	–
Kuwait	–	–	(1)	–	–
Syria	–	–	2	–	–
Surinam	–	(1)	–	–	–
Guatemala	–	–	1	–	–
Nicaragua	–	2	9	–	–
Colombia	771	–	–	–	–
Total	1,321	1,013	356	284	347
Total Value (thousands of $)	328	135	107	111	132

(1) Less than 1 ton.

Source: DBS, Trade of Canada.

Comments to Tables 31–38 Canadian Imports of Crude Vegetable Oils

Imports of crude edible vegetable oils have undergone some interesting changes during the past two years.

Oil	1964-65	1965-66
	– thousands of tons –	
Soybean Oil	16.9	11.9
Coconut Oil	20.4	21.3
Corn Oil	8.6	9.6
Cottonseed Oil	20.4	25.5
Olive Oil	1.8	1.5
Palm Oil	10.0	10.5
Palm Kernel	4.3	5.8
Peanut	4.1	9.8
Misc. Veg. Fats & Oils	2.9	9.4
Total	89.4	105.3

Canadian edible vegetable oil imports have risen during 1965/66 by 11.7 per cent, i.e., by 15,900 tons.

Except for soybean oil, all major commodities showed gains.

Coconut oil from Malaysia has displaced Ceylonese oil from the first place as a supplier.

Surprisingly enough, even cottonseed oil imports from the United States have increased, despite smaller supplies.

Peanut oil imports from Nigeria became most attractive and imports climbed from 1,800 tons in 1964/65 to 7,681 tons in 1965/66. Imports in the basket class of miscellaneous vegetable oils and fats have grown by about 6,500 tons, reflecting extensive rapeseed and sunflowerseed oil purchases. These extraordinary imports of the year 1966 should be more clearly reflected when statistics for the complete calendar become available.

CANADIAN IMPORTS OF SPECIFIED INEDIBLE VEGETABLE OILS

TABLE 41

Canadian Imports of Castor Oil

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	26	8	4	1	5
Netherlands	165	–	–	–	1,157
India	9	12	10	11	7
Brazil	2,135	2,433	2,427	3,260	2,296
United States	217	71	90	104	103
Japan	–	165	–	–	214
Total	2,552	2,689	2,531	3,376	3,782
Total Value (thousands of $)	722	670	595	748	972

Source: DBS, Trade of Canada.

TABLE 42

Canadian Imports of Oiticica Oil

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
Brazil	196	268	152	92	77
United States	115	33	16	–	–
Total	311	301	168	92	77
Total Value (thousands of $)	101	135	88	41	35

Source: DBS, Trade of Canada.

TABLE 43

Canadian Imports of Tung Oil

(crop year)
(short tons)

Origin	1961–62	1962–63	1963–64	1964–65	1965–66
United Kingdom	–	–	6	–	–
Hong Kong	33	137	117	668	769
Argentina	1,109	879	804	452	363
Paraguay	31	9	137	31	–
United States	171	131	348	66	84
Netherlands	–	–	5	–	–
Total	1,344	1,156	1,417	1,217	1,216
Total Value (thousands of $)	905	971	950	573	562

Source: DBS, Trade of Canada.

CANADIAN MARINE OILS AND MEALS

TABLE 44

Canadian Production of Marine Oils by Types and Areas

(millions of pounds)
(August – July)

Oil	1962/63	1963/64	1964/65(1)	1965/66	Jan-July 1965	Jan-July 1966
Atlantic Coast						
Groundfish:				6.4	2.9	2.9
Body & Offal	0.8	1.4	1.7	–	–	–
Liver	6.4	7.4	5.8	–	–	–
Herring	1.3	1.8	4.7	11.5	2.1	6.5
Seal	1.7	1.7	0.7	2.9	2.9	2.9
Other	0.1	0.7	3.1	1.3	0.3(2)	0.6(2)
Atlantic, Total	10.3	13.0	16.0	22.1	8.2	12.9
Pacific Coast						
Herring	42.2	50.6	47.8	35.0	18.5	10.1
Total, Canada	52.5	63.6	63.8	57.1	26.7	23.0

Source: DBS No. 24–002 and Dept. of Fisheries
(1) Preliminary figures. Final figures expected to be somewhat higher.
(2) Mainly whale oil.

Canadian Production of Marine Oils by Types and Areas

Total marine oil production declined in 1965/66 by 6.7 million pounds (10.5 per cent) compared with the previous season. The decline would have been much greater, had it not been for the striking increase of herring oil production on the Atlantic Coast from 4.7 million pounds to 11.5 million pounds, which counterbalanced the drop of 12.8 millions pounds on the Pacific Coast. New herring reduction plants on the Atlantic Coast thus contributed one quarter of Canada's herring oil production.

A similar trend continued in 1966. Data including September 1966 showed a total herring oil production of 28.7 million pounds, and the Atlantic Coast's share amounted to 12.1 million pounds or 42 per cent. While herring oil production on the Atlantic Coast increased more than twofold during this period, relatively poor herring landings in British Columbia caused a decrease in oil production by 34 per cent from 25.3 million pounds to 16.6 million pounds.

Cumulative landed values per ton of herring for January to September 1966 were as follows:

British Columbia:	$38.60
New Brunswick:	34.20
Nova Scotia:	22.60
Newfoundland:	24.70

Production of salmon and whale oil has not been included in this report, since data were not available on a monthly basis. Salmon oil production amounted to 0.6 million pounds in 1965, and whale oil production has been estimated at six million pounds.

Canadian Trade in Marine Oils

Marine oil imports in 1965/66 shrank to nearly half the volume of the previous season, further reflecting the lack of demand from margarine manufacturers.

Exports of marine oils declined by 27 per cent to 9,000 tons in 1965/66; 3,666 tons of herring oil out of a total production of 23,300 tons were exported.

TABLE 45

Canadian Supply and Disposition of Marine Oils

(crop year)
(tons)

	1962-63	1963-64	1964-65	1965-66
Production (1)	25,600	30,100	29,600	27,700
Imports (1)	27,372	1,124	3,662	1,898
Exports (1)	366	8,455	8,645	5,491
Apparent Domestic Disappearance	52,606	22,769	24,617	24,107

Source: Based on DBS data.
(1) Estimation of edible oils only.

Canadian Supply and Disposition of Marine Oils

The system of classification of production and trade statistics renders an accurate determination of the disposition of marine oils rather difficult. The following procedure was applied to calculate apparent domestic disappearance.

Herring oil, seal oil and an estimated annual production of 3,000 tons of whale oil were included into the domestic production figure. Only the classifications "Fish and Marine Oil, n.e.s." for the imports and Herring Oil plus Whale Oil for the exports were considered for tabulation. There should consequently be reasonable assurance that only edible oils are included into this table.

The results show that following the extensive use of marine oils in margarine and shortening during the year 1962/63, the consumption of these oils has gone down to a level of 24,000 tons. Even when prices for marine oils were competitive with other oils, margarine manufacturers have hesitated to switch to marine oil formulations during the past two to three years. Only some low-priced brands are predominantly marine oil blends at the present time. A stigma attached to marine oils rather than an inferiority of quality seems to be the main reason for this attitude.

TABLE 46

Canadian Imports of Marine Oils by Types

(crop year)
(short tons)

	1961-62	1962-63	1963-64	1964-65	1965-66
Fish Liver and Visceral Oil	–	–	41	42	105
Fish and Marine Animal Oil	16,270	27,372	1,124	3,662	1,898
Whale Oil and Spermaceti	483	392	126	–	–
Cod Liver Oil	417	528	297	–	–
Total	17,170	28,292	1,588	3,704	2,003
Total Value (thousands of $)	2,158	2,845	401	799	436

Source: DBS, Trade of Canada.

TABLE 47

Canadian Exports of Marine Oils by Types

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
Herring Oil, n.e.s.	185	31	5,541	6,735	3,666
Cod Liver Oil, Sun Rotted	3,148	4,994	3,514	3,045	1,915
Fish and Marine Animal Oil, n.e.s.	259	303	594	568	1,575
Whale Oil	357	335	2,914	1,910	1,825
Fish Liver and Visceral Oils	3	20	64	18(1)	(1)
Total	3,952	5,683	12,627	12,276	8,981
Total Value (thousands of $)	542	547	2,089	2,183	1,707

(1) This small and ill defined class was combined with Class No. 392-99 Fish and Marine Animal Oil, n.e.s., commencing in 1965.

Source: DBS, Trade of Canada.

TABLE 48

Canadian Production of Fish Meal by Types & Area

(crop year)
(thousands of tons)

Meal	1962-63	1963-64	1964-65(1)	1965-66	Jan-July 1965	Jan-July 1966
Atlantic Coast						
Groundfish	29.1	25.3	31.8	45.4	20.1	22.7
Herring	5.0	3.4	9.6	20.5	5.4	13.1
Other	–	0.9	0.8	1.2	0.4	0.7
Atlantic, Total	34.2	29.6	42.2	67.1	25.9	36.5
Pacific Coast						
Herring (2)	46.8	50.8	40.2	32.4	22.8	13.7
Canada, Total	81.0	80.5	82.4	99.5	48.7	50.2

Source: DBS No. 24-002 and Dept. of Fisheries

(1) Preliminary figures. There has been an upward revision, especially for the groundfish meal.

(2) On the Pacific Coast salmon and other meal is produced apart from herring meal. In 1965, 500 tons of salmon meal and 200 tons of other meal (offal) were produced.

TABLE 49

Canadian Supply and Disposition of Fish Meal

(crop year)
(thousands of tons)

	1962-63	1963-64	1964-65	1965-66
Production	81.0	80.5	82.4	99.5
Imports	5.0	2.2	3.9	–
Exports	46.3	61.5	55.8	59.5
Apparent Domestic Disappearance	39.7	21.1	30.5	40.0

TABLE 50

Canadian Imports of Fish Meal

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
Republic Of South Africa................	–	250	1,000	3,800	
United States..........................	113	191	80	107	
Peru	4,850	1,564	1,102	–	
Total..............................	4,963	2,005	2,182	3,907	4
Total Value (thousands of $)	457	235	233	439	–

Source: DBS, Trade of Canada.

TABLE 51

Canadian Exports of Fish Meal and Condensed Solubles

(crop year)
(short tons)

	1961-62	1962-63	1963-64	1964-65	1965-66
Fish Meal, nes..........................	9,601	9,590	10,989	14,425	20,433
Herring Meal and Pilchard Meal...........	36,702	38,821	50,535	41,407	39,051
Fish Condensed Homogenized Solubles.....	1,426	2,172	1,814	1,956	1,760
Total (Meal Only)	46,303	48,411	61,524	55,832	59,484
Total Value (Meal Only) (thousands of $) .	6,172	6,803	8,520	8,384	10,244

Source: DBS, Trade of Canada.

The Canadian Fish Meal Stituation:

As a result of the expansion of the fish reduction industry on the Atlantic Coast, fish meal production showed a sizable increase of 17,000 tons to 99,500 tons in 1965/66, although a revision of the previous year's figures may somewhat reduce the extent of this growth. The production of groundfish meal, probably predominantly white fish meal, accounts for an increasingly larger share of the total. The expected reduction of herring meal output on the West Coast has been fully compensated for by the growth of herring reduction on the East Coast, and 1966 can be expected to be another record year.

Fish meal imports ceased entirely in 1965/66, while the export volume increased by 3,650 tons to 59,500 tons, worth more than $10 million.

In the absence of stock data, the value of 40,000 tons as apparent domestic disappearance must be treated with caution. Nevertheless, stocks were said to be low, and indications are that consumption has gone up despite the high price levels.

CANADIAN TRADE IN ANIMAL FATS

TABLE 52

Canadian Imports of Tallow

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
Australia	–	331	–	4	–
United States	2,044	2,057	4,084	3,958	3,967
Sweden	11	51	–	–	–
New Zealand	5	–	–	–	–
Total	2,060	2,439	4,084	3,962	3,967
Total Value (thousands of $)	407	467	721	889	896

Source: DBS, Trade of Canada.

TABLE 53

Canadian Exports of Inedible Tallow

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	17,880	9,344	29,564	29,258	13,004
Italy	537	600	1,020	430	1,672
Netherlands	4,885	3,970	327	1,623	9,037
Iran	55	–	1,841	–	639
Ghana	–	315	913	1,060	1,004
Southern Rhodesia	–	–	236	–	–
Republic of South Africa	1,445	–	4,062	2,170	7,132
Malaysia	–	–	150	–	–

TABLE 53 (Concl.)

Canadian Exports of Inedible Tallow

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
Japan	7,916	11,393	9,995	13,929	8,665
Korea	–	–	55	–	–
British Guiana	–	–	32	170	289
Colombia	790	598	150	50	–
Ecuador	308	1,311	1,052	3,734	1,946
Venezuela	–	–	–	111	–
Barbados	734	41	395	486	362
Leew. Wind. Is.	93	102	72	125	110
Trinidad and Tobago	127	275	487	575	2,224
Cuba	16,375	16,578	10,895	14,524	9,808
El Salvador	–	918	496	152	1,382
United States	209	1,198	211	294	339
Jamaica	1,289	772	784	–	–
Germany, West	–	–	–	–	1,415
Spain	–	–	–	–	499
Switzerland	–	–	–	319	–
Portugal	–	331	–	–	–
Pakistan	–	–	–	–	27,307
Rhodesia and Nyassaland	–	450	224	–	–
Thailand	–	–	11	–	–
Dominican Republic	–	150	100	–	–
Nicaragua	25	–	–	–	–
Belgium/Luxemburg	299	–	–	–	–
Total	52,967	48,346	63,072	69,010	86,834
Total Value (thousands of $)	7,387	6,265	8,809	12,583	11,542

Source: DBS, Trade of Canada.

TABLE 54

Canadian Imports of Lard (1)

(crop year)
(thousands of pounds)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	(2)	–	–	–	–
United States	23,920	22,740	16,203	15,005	28,923
Total	23,920	22,740	16,203	15,005	28,923
Total Value (thousands of $)	2,451	2,054	1,511	1,745	3,643

(1) Until December 1962 this class comprised "Lard and Compounds Stearine".
(2) Less than 1,000 pounds.
Source: DBS, Trade of Canada.

TABLE 55

Canadian Imports of Grease, Including Wool Grease and Lanolin(1)

(short tons)
(crop year)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	168	142	150	233	178
Germany, West	6	16	45	48	–
Japan	–	–	–	–	4
Australia	–	–	3	47	53
United States	11,665	13,383	11,536	10,664	5,690
Ireland	–	–	11	–	–
Total	11,839	13,541	11,745	10,992	5,925
Total Value (thousands of $)	1,555	1,681	1,704	2,098	1,154

(1) Until 1963 this class was listed as No. 2304: Grease and Degras, and has appeared under the above description from 1964 as No. 391-15
Source: DBS, Trade of Canada.

TABLE 56

Canadian Imports of Animal Oils and Fats

(crop year)
(short tons)

Origin	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	126	7	3	6	–
Australia	9	–	29	–	5
United States	632	1,479	962	428	403
Poland	–	–	1	–	–
Ireland	–	–	15	–	–
Belgium/Luxemburg	8	–	6	–	–
France	–	–	–	–	(1)
Total	775	1,486	1,016	434	408
Total Value (thousands of $)	164	374	256	117	160

(1) Less than 1 ton.

Source: DBS, Trade of Canada.

Comments on Canadian Trade in Animal Fats

a) Tallow imports have remained steady, most of it being of an edible grade.

b) Inedible tallow exports rose to a record high of 86,800 tons in 1965/66, due to a large shipment made to Pakistan. Had it not been for this shipment, exports would have declined, because not only Britain, but also Japan and Cuba – previously our best customers – drastically reduced their imports.

Supply and Disposition of Inedible Tallow (thousands of tons)

	1964–65	1965–66
Opening Stocks	12.5	8.3
Production	102.0	98.5
Exports	69.0	86.8
Apparent Domestic Consumption	37.4	6.0
Ending Stocks	8.3	14.0

Looking at the wide discrepancy between apparent domestic consumptions for 1964/66, it becomes difficult to accept the conclusion of such a striking reduction in domestic consumption.

c) Canadian imports of lard from the United States have risen by more than 90 per cent to 28.9 million pounds in 1965/66 despite shorter supplies and higher prices.

d) Imports and exports of Animal Oils and Fats cover import and export class No. 39–199, containing chicken fat, lard oil, neats foot oil, animal stearine and tallow oil.

TABLE 57

Canadian Exports of Animal Oils and Fats

(crop year)
(short tons)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	191	132	286	141	145
Belgium/Luxemburg	–	–	(1)	(1)	–
Finland	–	–	–	20	–
Germany, West	(1)	–	1	–	–
Italy	–	757	5	320	–
Bahamas	–	–	(1)	–	–
United States	335	256	797	208	1,324
Hong Kong	32	–	–	–	–
Japan	661	426	–	5	453
Jamaica	10	14	3	23	8
Netherlands	–	–	219	–	–
Spain	–	422	–	–	–
Colombia	59	–	–	–	–
Bermuda	–	–	(1)	–	–
Leew. Wind. Is.	–	(1)	–	–	–
Cuba	75	–	(1)	–	–
Norway	–	–	–	–	16
British Guiana	–	–	–	–	28
Total	1,363	2,007	1,311	717	1,974
Total Value (thousands of $)	204	218	159	134	182

(1) Less than 1 ton.
Source: DBS, Trade of Canada.

REVIEW OF FINISHED PRODUCTS

TABLE 58

Canadian Production of Specified Oils and Fats Products

(crop year)

	1961–62	1962–63	1963–64	1964–65	1965–66
			– millions of pounds –		
Margarine	190	176	170	168	173
Butter	–	359	353	346	332
Shortening					
Package	53	52	54	53	223
Bulk	121	129	134	138	
Refined Oils					
Coconut	18	19	14	15	–
Salad & Cooking	65	73	76	70	107
Lard	105	98	105	104	86
Tallow					
Edible	40	40	46	51	48
Inedible	169	168	186	204	197
Grease, other than white	5	5	6	5	4
Other fats & Oils(1)	6	7	9	6	10

(1) Includes white grease, neats foot oil, oleo oil, oleostearin, oleo stock and other oils.

Source: DBS.

Comments on Canadian Production of Specified Fats and Oils Products

Since DBS substantially revised its system of gathering and presenting fats and oils data in 1966, a comparison with statistics of previous years is frequently not possible.

(a) Margarine: After overcoming some difficulties encountered in the early part of 1966, the latest data for packaged margarine production are now considered to be accurate. In 1965/66 the downward trend in margarine production was halted and production rose by five million pounds to 175 million pounds, amounting to an 8.7 pounds per capita consumption.

(b) Butter: Production continued its decline, dropping by four per cent, or 14 million pounds, to 332 million pounds compared with the previous year.

(c) Shortening: Due to increased coverage, a comparison of the total volume of 223 million pounds with that of the previous season is not possible. Companies not previously covered by the DBS survey were included this year. Coconut and palm kernel oil, if not used as salad oil or in margarine, have now been grouped with shortening.

(d) Salad and Cooking Oils: Again, the wider coverage prevents a comparison. The volume of 107 million pounds as compared with 70 million pounds, merely indicates that a larger consumption figure can be expected than was evident from past statistics.

(e) Lard: Again, while it may be difficult to draw a comparison with previous years, the smaller hog supply would point to a decline in production.

(f) Tallow: Production data for edible and inedible tallow were probably complete also in previous years. Overall production decreased by about four per cent during 1965–66.

(g) Grease and Other Oils and Fats: Since there was no change in coverage, the amounts shown for 1965/66 represent the production of this diverse group of fats.

TABLE 59

Canadian Consumption of Oils and Fats in Margarine, Shortening, Salad and Cooking Oils

(refined basis) (millions of pounds)

Nine months ended September, 1965 and 1966.

	1965		1966			
	Margarine Packaged Only	Shortening	Margarine Packaged Only	Shortening & Shortening Oils	Salad & Cooking Oils	Total
Vegetable Oils						
Coconut	0.2	2.1	(2)	(2)	(2)	18.8
Corn	(1)	–	(2)	(2)	(2)	20.7
Cotton Seed	2.6	8.2	(2)	(2)	(2)	24.0
Palm	4.8	6.7	5.2	11.2	–	16.3
Palm Kernel	(1)	–	–	5.8	–	5.8
Peanut	(1)	–	(2)	(2)	(2)	10.0
Rapeseed	(1)	–	(2)	23.9	(2)	64.7
Soybean	51.2	43.0	40.7	47.0	24.1	111.8
Sunflower Seed	(1)	–	(2)	(2)	(2)	(2)
Other	12.9	16.0	(2)	(2)	(2)	(2)
Total Vegetable	71.7	75.9	76.0	118.0	91.5	285.5
Marine Oils	22.4	9.4	(2)	(2)	(2)	31.9
Animal Oils						
Lard	5.9	17.7	(2)	(2)		17.3
Oleostarein	–	–	–	(2)	–	(2)
Tallow	–	32.7	(2)	(2)	–	32.0
Other	–	0.9	–	(2)	–	(2)
Total Animal	5.9	51.2	(2)	(2)	–	50.2
Total, All Fats & Oils	100.0	136.5	100.6	175.5	91.5	367.5

(1) Listed under other.

(2) Confidential.

Source: DBS Cat. No. 32–006.

TABLE 60

Canadian Imports of Margarine and Shortening

(crop year)
(thousands of pounds)

Origin	1963-64	1964-65	1965-66
United Kingdom	257	172	–
Sweden	164	280	130
United States	4,837	3,918	3,195
Total	5,258	4,370	3,325
Total Value (thousands of $)	877	885	706

Source: DBS, Trade of Canada.

TABLE 61

Canadian Exports of Margarine and Shortening

(crop year)
(thousands of pounds)

Destination	1961-62	1962-63	1963-64	1964-65	1965-66
Netherlands	–	–	7.2	14.2	15.8
Bahamas	0.3	–	2.1	0.6	–
Bermuda	27.9	31.2	37.5	57.5	62.7
Jamaica	–	16.4	–	25.3	–
Leew.Wind. Is.	–	–	0.4	–	–
St. Pierre	2.5	12.9	14.1	44.4	75.3
United States	1.3	2.8	3.0	3.4	8.0
United Kingdom	–	–	0.3	–	0.9
Norway	–	–	–	–	0.2
Japan	–	–	–	–	21.0
Cuba	–	–	44.6	0.4	–
Barbados	–	1.4	–	–	–
Total	32.0	64.7	109.2	145.8	183.9
Total Value (thousands of $)	8	16	26	38	48

Source: DBS, Trade of Canada.

Canadian Trade in Finished Products

a) Imports of "Margarine and Shortening", which do not include margarine because of the import embargo, have dropped by about one million pounds to 3.3 million pounds.

b) Imports of Vegetable Cooking Fats and Packaged Salad Oils increased 2.2 million pounds in 1965/66 to slightly above 10 million pounds (5,184 tons). This is probably due to imports of specially processed salad and cooking oils from the United States.

c) Exports of margarine and shortening remained insignificant, with the bulk being exported again to Bermuda and St Pierre and Miquelon.

TABLE 62

Canadian Production of Salad Dressings and Mayonnaise

(millions of pounds)

	1961	1962	1963	1964	1965	1966
1st Quarter	8.8	9.3	10.0	10.6	13.0	12.7
2nd Quarter..................	13.9	14.3	16.4	17.3	17.2	19.7
3rd Quarter	8.8	10.0	9.1	9.1	10.9	14.7
4th Quarter	6.6	7.0	8.1	9.0	9.8	
Total	38.1	40.6	43.6	46.0	50.8	

Source: DBS No. 32–018, and 32–007 prior to 1962.

TABLE 63

Canadian Production of Sandwich Spreads(1)

(thousands of pounds)

	1961	1962	1963	1964	1965	1966
1st Quarter	947	918	1,138	981	1,173	1,661
2nd Quarter..................	1,012	1,230	1,147	1,391	1,332	1,376
3rd Quarter	971	922	780	1,024	1,077	1,260
4th Quarter	947	844	998	1,023	988	
Total	3,877	3,914	4,063	4,418	4,570	

(1) Excluding meat and poultry paste.
Source: DBS No. 32–018, and 32–007 prior to 1962

TABLE 64

Canadian Production of Peanut Butter

(millions of pounds)

	1961	1962	1963	1964	1965	1966
1st Quarter..................	10.6	10.1	10.5	12.0	12.9	13.0
2nd Quarter	9.7	10.7	10.0	11.7	10.5	11.9
3rd Quarter..................	8.7	8.8	10.3	11.1	11.1	10.0
4th Quarter..................	8.6	9.4	8.6	10.4	11.1	
Total.....................	37.6	39.0	39.4	45.2	45.6	

Source: DBS No. 32-018, and No. 32-007 prior to 1962.

TABLE 65

Canadian Imports of Vegetable Cooking Fats and Packaged Salad Oils

(crop year)
(short tons)

Origin	1964-65	1965-66
United Kingdom	382	291
Sweden	45	63
Switzerland	–	(1)
United States	3,649	4,830
Total	4,076	5,184
Total Value (thousands of $)	2,248	2,751

(1) Less than 1 ton.
Source: DBS, Trade of Canada

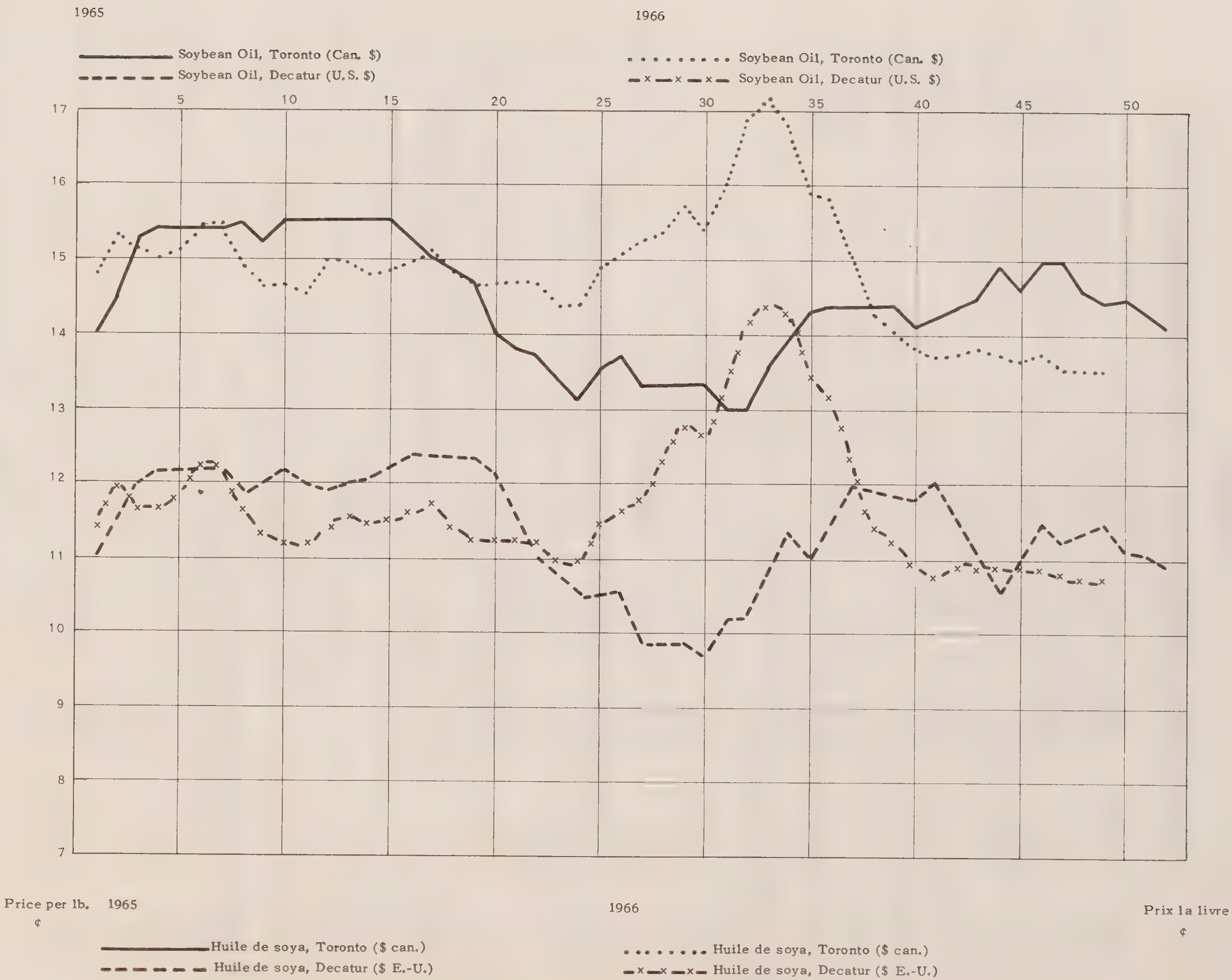
TABLE 66

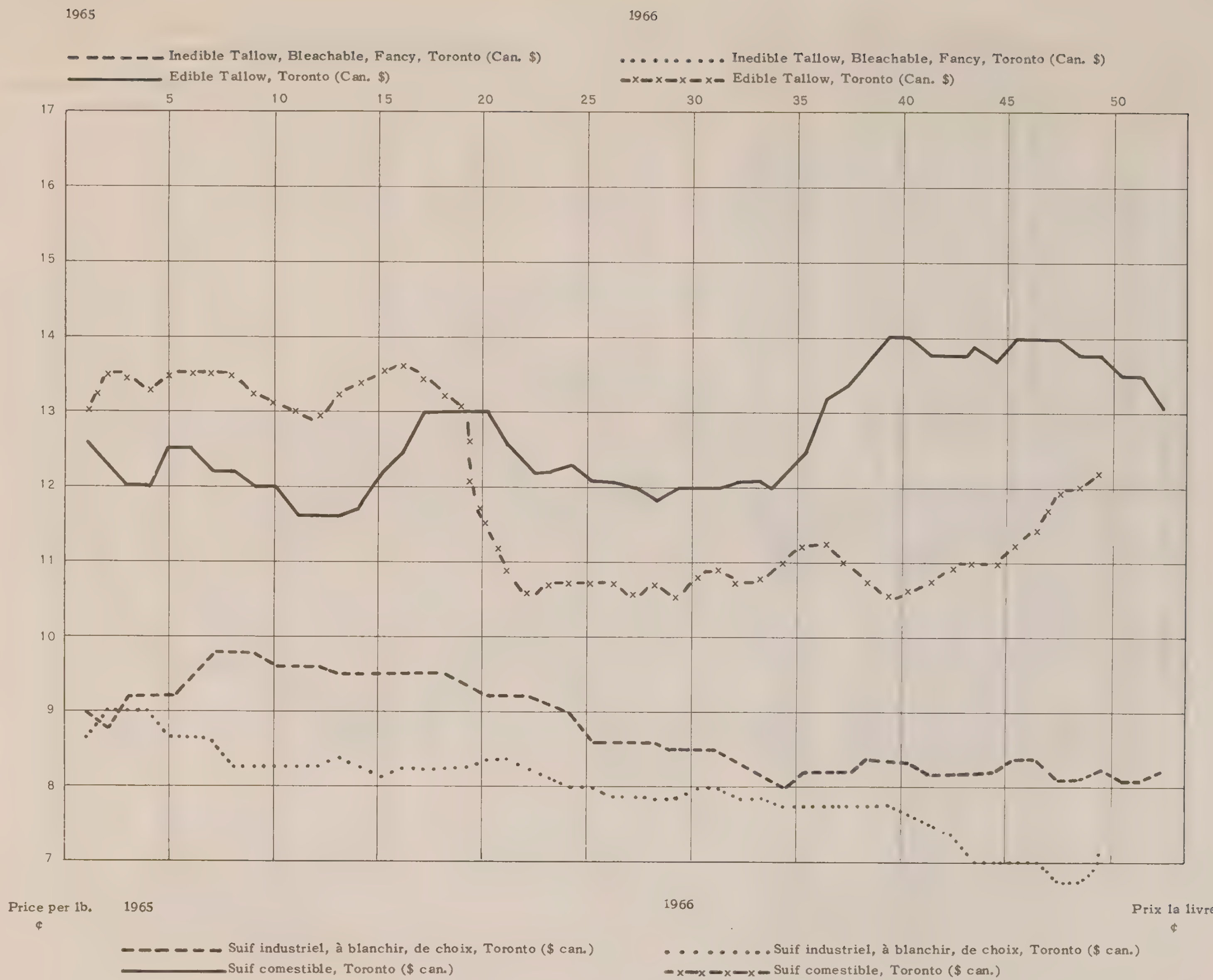
Average Retail Prices For Canada For Certain Fats (Cents)

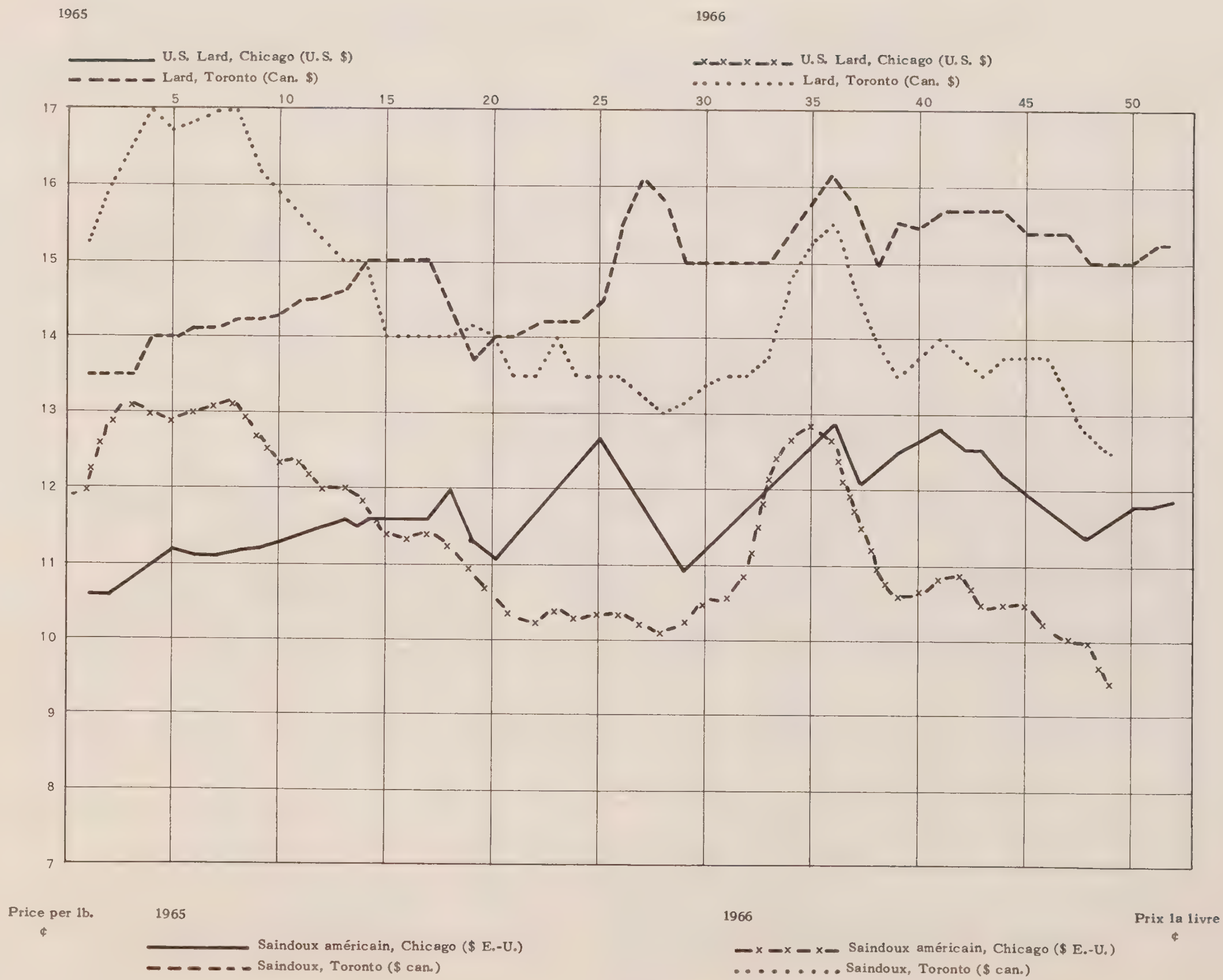
1962 – 1966

	1962	1963	1964	1965	Nov.*	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Margarine, lb.	29.6	28.0	29.3	33.9	34.5	34.6	34.5	34.9	35.1	35.7	36.0	36.0	36.3	36.4	36.2	36.7
Shortening, lb.	34.9	34.6	35.9	38.7	39.4	39.6	40.0	40.3	40.7	41.0	40.6	40.8	41.0	41.0	41.2	41.7
Lard, pure, lb.	22.5	22.8	23.7	27.2	29.2	29.3	29.4	29.8	30.5	30.8	30.8	30.2	29.9	29.7	29.7	30.0
Salad Dressing Jar, 16 oz.	42.6	42.6	42.6	44.0	44.3	44.5	44.5	44.6	44.3	44.3	44.6	44.3	44.5	44.5	44.5	44.3
Butter, creamery, first grade, 1 lb.	62.1	58.5	58.9	61.4	62.1	62.6	62.8	65.3	65.3	67.1	67.5	67.2	67.3	67.5	67.3	69.4

Source: DBS, Prices & Price Indexes, No. 62-002.
* The months cover the period November 1965 to October 1966.


1965
1966
Soybean Oil, Toronto (Can. $)
Soybean Oil, Decatur (U.S. $)
Soybean Oil, Toronto (Can. $)
Soybean Oil, Decatur (U.S. $)
5
10
15
20
25
30
35
40
45
50
17
16
15
14
13
12
11
10
9
8
7
Price per lb.
¢
1965
1966
Prix la livre
¢
Huile de soya, Toronto ($ can.)
Huile de soya, Decatur ($ E.-U.)
Huile de soya, Toronto ($ can.)
Huile de soya, Decatur ($ E.-U.)


1965
Inedible Tallow, Bleachable, Fancy, Toronto (Can. $)
Edible Tallow, Toronto (Can. $)
1966
Inedible Tallow, Bleachable, Fancy, Toronto (Can. $)
Edible Tallow, Toronto (Can. $)
5 10 15 20 25 30 35 40 45 50
17 16 15 14 13 12 11 10 9 8 7
Price per lb.
¢
1965
1966
Prix la livre
¢
Suif industriel, à blanchir, de choix, Toronto ($ can.)
Suif comestible, Toronto ($ can.)
Suif industriel, à blanchir, de choix, Toronto ($ can.)
Suif comestible, Toronto ($ can.)



1965
U.S. Lard, Chicago (U.S. $)
Lard, Toronto (Can. $)
1966
U.S. Lard, Chicago (U.S. $)
Lard, Toronto (Can. $)
5
10
15
20
25
30
35
40
45
50
17
16
15
14
13
12
11
10
9
8
7
Price per lb.
¢
1965
Saindoux américain, Chicago ($ E.-U.)
Saindoux, Toronto ($ can.)
1966
Saindoux américain, Chicago ($ E.-U.)
Saindoux, Toronto ($ can.)
Prix la livre
¢

Wild Mustard Seed in Rapeseed

Statement of the Board of Grain Commissioners, Winnipeg, Manitoba, released December 13, 1966.

To safeguard foreign markets for Canadian rapeseed and to protect the domestic processors of this crop, the Board of Grain Commissioners has advised the grain trade that it intends to limit the amount of wild mustard seed permissible in grades Nos. 1, 2 and 3 Canada Rapeseed. It is expected that the limit will be set at a maximum of five per cent and will go into effect August 1, 1967. Prior to the 1966 harvest, the average amount of wild mustard seed contained in rapeseed received at country and terminal elevators was quite low. However, rapeseed harvested in 1966 shows a significant increase in wild mustard seed content. If this upward trend continues throughout another year of production, the Board feels that a serious loss of rapeseed markets could result, which would be to the detriment of producers in Western Canada.

Wild mustard seed cannot be distinguished from rapeseed by the naked eye. Accordingly, farmers who intend to plant rapeseed in 1967 are strongly urged to have non-pedigreed seed stocks tested for purity, or better still, to sow only pedigreed seed.

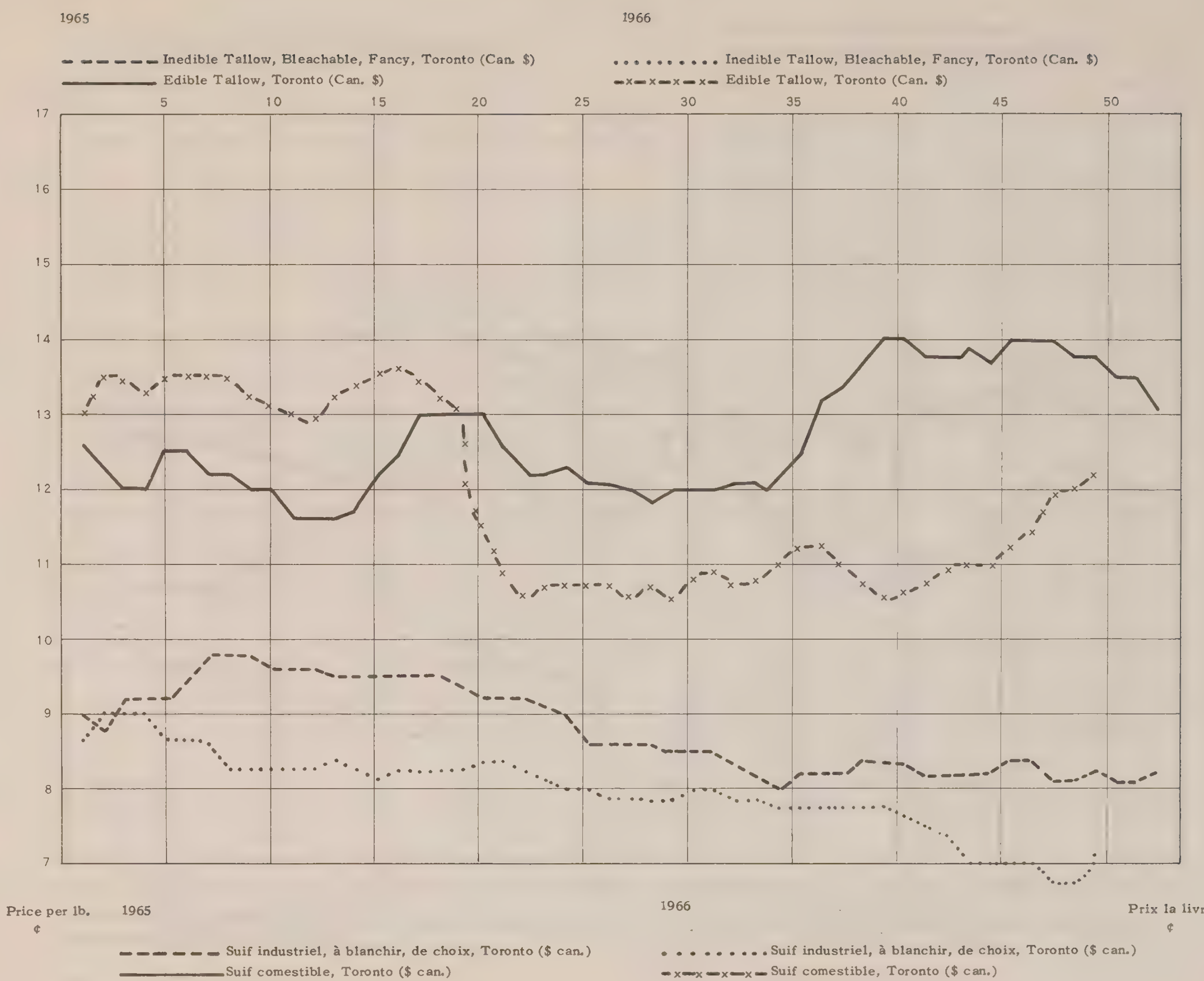
TABLE 17

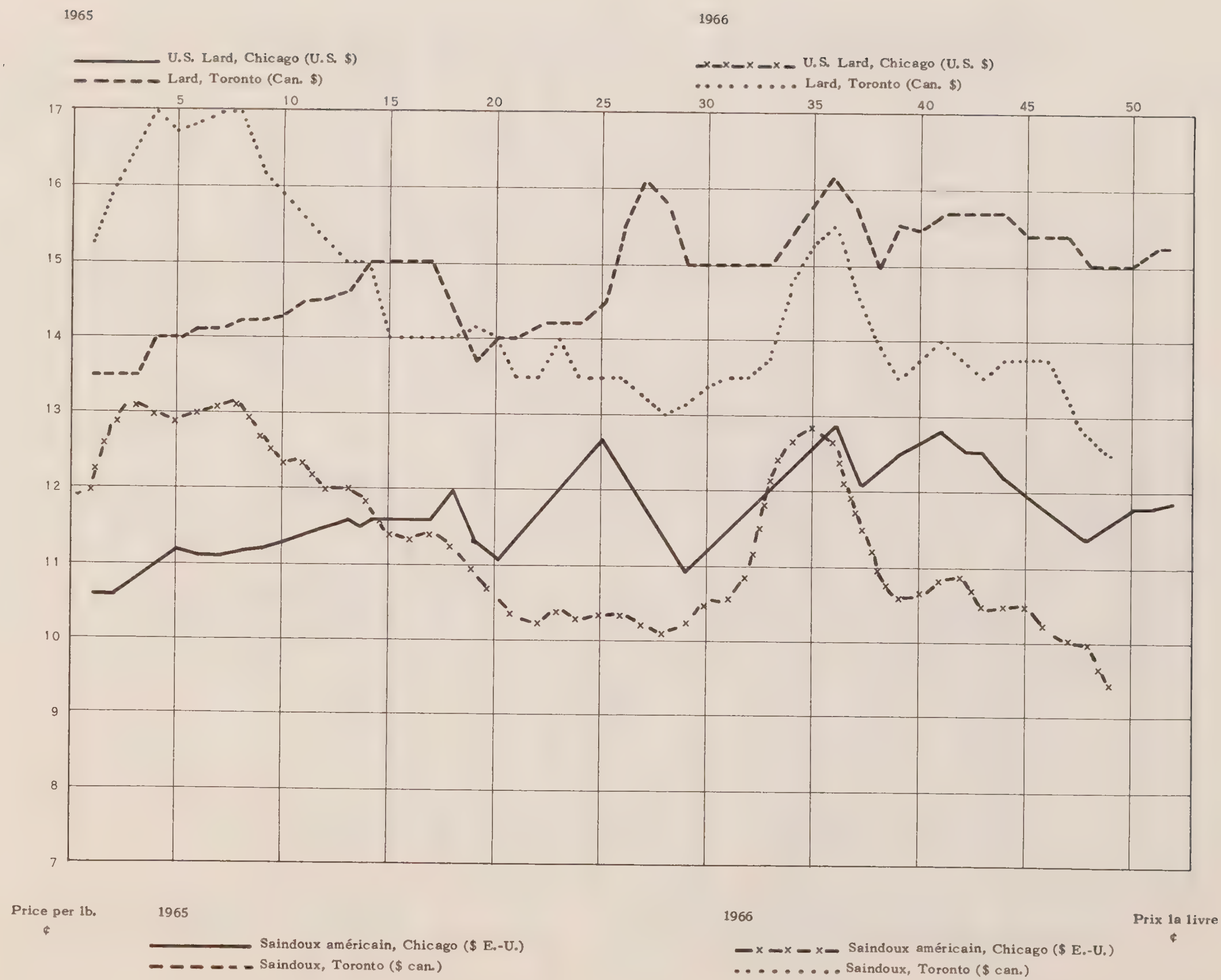
Canadian Exports of Rapeseed

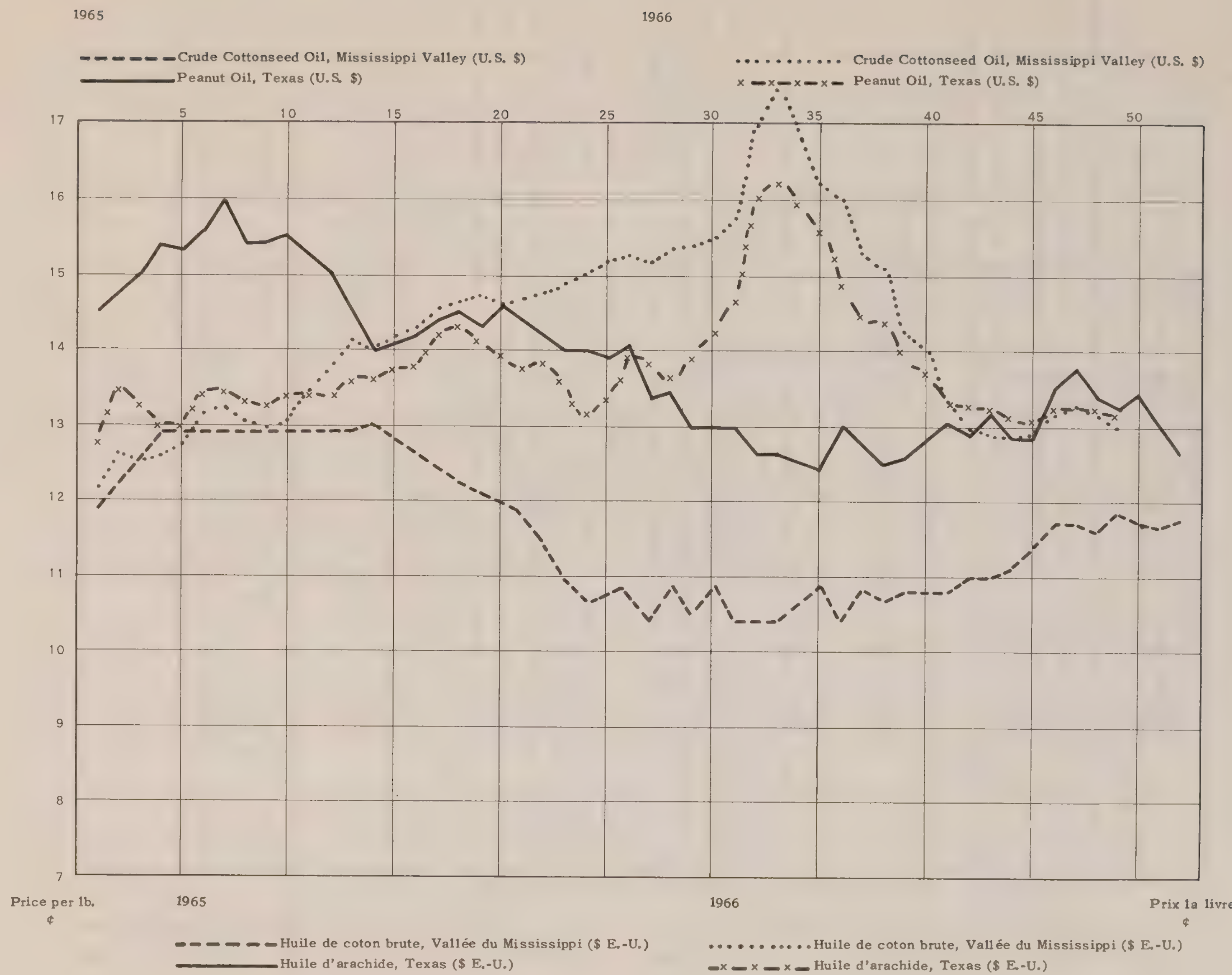
(crop year)
(short tons)

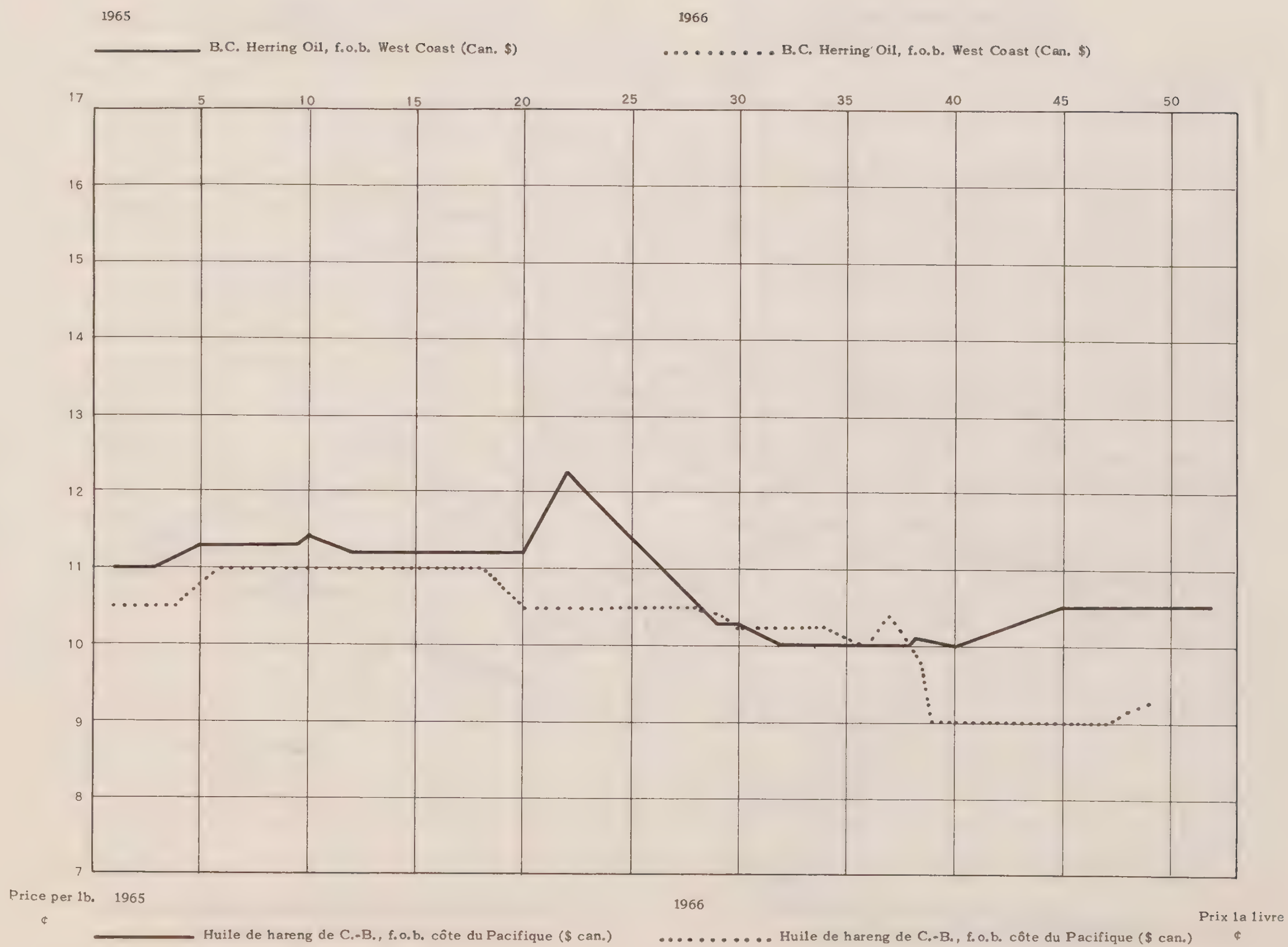
Destination	1961-62	1962-63	1963-64	1964-65	1965-66
United Kingdom	2,363	1,820	2,296	8,922	4,055
Belgium/Luxemburg	2,800	375	–	1,696	8,369
France	8,550	–	–	–	–
Finland	–	–	2,246	–	–
Germany, West	5,786	9,734	161	15,961	26,884
Italy	79,971	31,334	4,721	36,546	71,868
Netherlands	24,719	9,289	4,166	25,893	31,451
Algeria	12,225	13,888	–	–	–
Spain	–	–	41	1,034	109
India	–	–	–	2,800	–
Japan	28,493	77,637	108,273	89,187	169,037
Taiwan	–	–	5,227	1,213	–
United States	58	966	3,155	60	160
Czechoslovakia	–	–	–	15,183	–
Poland	–	–	–	9,921	–
Pakistan	–	–	–	22,462	19,841
Total Weight (short tons)	164,965	145,043	130,286	230,878	331,774
Total Weight (thousands of bushels)	6,599	5,802	5,211	9,235	13,271
Total Value (thousands of $)	16,611	13,372	14,514	27,548	36,039

Source: DBS, Trade of Canada.


1965
1966
Inedible Tallow, Bleachable, Fancy, Toronto (Can. $)
Edible Tallow, Toronto (Can. $)
Inedible Tallow, Bleachable, Fancy, Toronto (Can. $)
Edible Tallow, Toronto (Can. $)
5
10
15
20
25
30
35
40
45
50
17
16
15
14
13
12
11
10
9
8
7
Price per lb.
¢
1965
1966
Prix la livre
¢
Suif industriel, à blanchir, de choix, Toronto ($ can.)
Suif comestible, Toronto ($ can.)
Suif industriel, à blanchir, de choix, Toronto ($ can.)
Suif comestible, Toronto ($ can.)


1965
U.S. Lard, Chicago (U.S. $)
Lard, Toronto (Can. $)
1966
U.S. Lard, Chicago (U.S. $)
Lard, Toronto (Can. $)
Price per lb.
¢
Prix la livre
¢
1965
Saindoux américain, Chicago ($ E.-U.)
Saindoux, Toronto ($ can.)
1966
Saindoux américain, Chicago ($ E.-U.)
Saindoux, Toronto ($ can.)


1965
1966
Crude Cottonseed Oil, Mississippi Valley (U.S. $)
Peanut Oil, Texas (U.S. $)
Crude Cottonseed Oil, Mississippi Valley (U.S. $)
Peanut Oil, Texas (U.S. $)
5 10 15 20 25 30 35 40 45 50
17 16 15 14 13 12 11 10 9 8 7
Price per lb. ¢
1965
1966
Prix la livre ¢
Huile de coton brute, Vallée du Mississippi ($ E.-U.)
Huile d'arachide, Texas ($ E.-U.)
Huile de coton brute, Vallée du Mississippi ($ E.-U.)
Huile d'arachide, Texas ($ E.-U.)



1965
B.C. Herring Oil, f.o.b. West Coast (Can. $)
1966
B.C. Herring Oil, f.o.b. West Coast (Can. $)
17
16
15
14
13
12
11
10
9
8
7
5
10
15
20
25
30
35
40
45
50
Price per lb.
¢
1965
Huile de hareng de C.-B., f.o.b. côte du Pacifique ($ can.)
1966
Huile de hareng de C.-B., f.o.b. côte du Pacifique ($ can.)
Prix la livre
¢

CANADIAN FATS AND OILS DEVELOPMENTS

FAO Study on Coconut Oil Usage for Non-Food Purposes in the United States and Canada

The Food and Agriculture Organization of the United Nations has commissioned a United States consultant firm to investigate the industrial uses of coconut oil, other than for soap, in the United States and Canada. In 1965 the two countries accounted for 160,000 metric tons out of world imports for edible and inedible purposes of 1,230,000 metric tons.

A thorough analysis of the present uses of coconut oil as well as an assessment of its future potential in the various types of application has been incorporated into the study. Inquiries should be addressed to:

Fats and Oils Section,
Food and Agriculture Organization of the United Nations,
Via delle Terme di Caracalla,
Rome, Italy.

More than three quarters of all non-food uses of coconut oil, other than soap, are in the manufacture of synthetic detergents. In Canada surface coatings, oil additives, cosmetics and leather absorb most of the remainder. The investigators predict a decline of usage of this oil in detergents by about 75 per cent in the United States, while the decline is expected to be much less in Canada. The report predicts a total decline in these areas of application in the United States from 155,000 metric tons in 1965 to 56,000 tons in 1975, and in Canada from 7,900 metric tons in 1965 to 6,100 tons in 1975.

Unstable coconut oil prices have led end-product users to search for alternatives offered by synthetic fatty acids and alcohols, based on the oxidation of petroleum hydrocarbons. Both are in the process of becoming more readily available, and at lower and more stable prices. Five plants for the synthesis of fatty alcohols have already been built or are under construction in the United States, having an estimated total capacity of 150,000 metric tons per year. Synthetic fatty acid production is expected to start within a few years and will probably displace coconut oil fatty acids.

Only in the production of cosmetics do the authors anticipate an increased coconut oil usage. The utilization in soap manufacture is also expected to decline. New industrial uses of coconut oil cannot be foreseen at this stage, since the chemical and physical properties of its derivatives as well as the price can be matched by synthetic products.

It is pointed out that estimated Canadian usage must be enlarged by the imports of coconut oil derivatives. For example, such derivatives as lauric acid and lauryl alcohol must be imported.

The report lists major users in both countries, tariffs and its sources of information. A major part of the study discusses the chemical approaches taken to produce synthetic compounds in competition with coconut oil derivatives, and the conclusion is reached that the natural products will gradually be replaced.

Second International Sunflower Conference

by Dr. E. D. Putt,
Director, Experimental Farm, Canada Department of Agriculture, Morden, Manitoba.

Sixty persons from five countries participated in the Second International Sunflower Conference which was hosted by the Morden Experimental Farm, Morden, Manitoba on August 17 and 18, 1966. The delegates came from Russia, Chile, South Africa, United States and Canada and included representatives of industry, extension services and public research institutions. Topics discussed covered a wide range of subjects.

Two of the highlights of the conference were papers by Dr. A. Y. Panchenko and Madame Galina V. Pustovoit of the All-Union Research Institute of Oil Crops, Krasnodar, Russia. The largest producer of sunflowers in the world, Russia plants approximately 12,000,000 acres annually. Dr. Panchenko dealt with the development of production methods and results of breeding programs in Russia. One point which he stressed was the need for careful attention to the production of high quality planting seed. Academician V.S. Pustovoit has led the breeding work. The first major initial steps were development of resistance to sunflower moth (Homoeosoma nebullela) and broom rape (Orobanche cumana) a parasitic seed producing plant. A concerted effort to improve oil content followed. The first variety from the program, in 1927, had 36 per cent oil compared with 33 per cent in local varieties. Progressive improvements since have increased oil until today varieties with 54 per cent oil content are available. Concurrently no decline in yield per unit area occurred. On the contrary yield has tended to increase. The recent introduction of these varieties, such as Peredovik, to North America is expected to have a major impact on development of the crop in United States and Canada.

Madame Pustovoit capably demonstrated her continuance and amplification of the work of her illustrious father, Academician Pustovoit. Her presentation "Distant Hybridization in Sunflowers" dealt with capture of disease resistance from other species, primarily Helianthus tuberosus. High resistance to broom rape (Orobanche cumana), false mildew (Plasmopara helianthi), rust (Puccinia helianthi), and to Sclerotinia libertiania have been transferred from H. tuberosus to the cultivated sunflower and the desirable attributes of the latter including high oil content, good yield and satisfactory maturity have been retained. Madame Pustovoit also reported crosses of several other species of Helianthus with the cultivated sunflower. Dr. C.B. Heiser Jr. University of Indiana, Bloomington, added to the discussion with description of his work on the relationships within Helianthus as judged by hybridization and other taxonomic criteria.

The 18 other papers given included comments on production, marketing and outlook for the crop in the United States, Canada and Chile by representatives from the respective countries. Sunflower nutmeats, or sunflower seed with the hull removed, is proving an intriguing product in the United States with good prospects of an expanding market. Production of the crop in wide rows, i.e. rows eight to 16 feet apart, is proving of interest in the more arid areas of Alberta and Saskatchewan where a grain-summer-fallow rotation is commonly followed. Sunflowers in this type of planting may prove an adequate alternate for summer-fallow.

Four papers dealt with studies of diseases being conducted in Canada and the United States. Resistance to rust and to Verticillium, the two most important diseases in Canada, is available. Resistance to rust has been found in collections of wild annual sunflowers from several widely separated points in North America. The Russian varieties, such as Peredovik and Armavirec, show good resistance to verticillium.

Another paper dealt with the search for resistance to Homoeosoma electellum in Texas. This insect, which is the major deterrent for sunflower production in the southern and central United States, differs from the H. nebullela of Russia.

Aids to breeders in the crop were discussed in papers dealing with the inheritance of different sources of male sterility and methods of storing sunflower pollen at low temperatures. The effect of latitude on development of different varieties and the bearing this may have on hybrid seed production was considered.

Two papers on sunflower oil indicated good possibility for altering the composition of sunflower oil by breeding and overcoming the objectionable polymerization which occurs when the present oil is heated in open vessels.

The group was pleased to accept an invitation from Dr. B.E. Youngquist, Northwest School of Agriculture, University of Minnesota, Crookston, Minnesota, to convene and host the Third International Sunflower Conference in 1968.

Report on the Symposium on Canadian Marine Oils Held in Ottawa on October 11, 1966.

Dr. R.G. Ackman, Halifax, N.S.

A symposium on "Developments in the Production and Utilization of Marine Oils in Canada" was held in Ottawa on October 11, 1966. The symposium was organized by the Associate Committee on Fats and Oils of the National Research Council of Canada with the collaboration of the Canada Department of Industry and the Fisheries Research Board of Canada.

The opening paper by R.G. Ackman, Fisheries Research Board of Canada, Halifax, reviewed the fatty acid compositions of most commercial marine oils with emphasis on their basic similarity. The differing properties of these oils were explained in terms of the interrelationships between a few of the longer-chain monounsaturated fatty acids and two or three long-chain polyunsaturated fatty acids. L.G. Rupert, Department of Industry, Ottawa, presented the most recent production figures for oilseeds and marine oils in Canada. Particular attention was drawn to a shift in dates for the production figures shown in the July 1966 issue of "Fats and Oils in Canada". In the July issues production statistics will be for the calendar year January-December, whereas production statistics of the January issues will cover the oilseeds crop year of August-July. The major recent change in the marine oils position in Canada was shown as an increase in Atlantic coast herring oil production. Preliminary figures showed a production of 6.5 million pounds for the period January-July in 1966, as against 7.1 million pounds for all of 1965. The Pacific coast herring fishery was discussed from the producers' point of view by K. Andrews of British Columbia Packers, Vancouver. Modernization of techniques for catching, handling and processing herring for meal and oil have led to improvements in product quality. The government regulations and quota system affecting this regional industry were outlined by C.R. Levelton, Department of Fisheries, Ottawa, with the aims shown to be not only exploitation of the herring stocks for a maximum sustained yield but also to minimize inadvertent interference with migrating salmon. The large scale expansion of the herring industry on the Atlantic coast is not as yet particularly affected by restrictions, and P.M. Jangaard, Fisheries Research Board of Canada, Halifax, showed that the landings of Atlantic herring had increased from 142,000

metric tons in 1964 to 183,000 tons in 1965. The siting of new plants throughout the Atlantic provinces and the introduction of purse-seining were reviewed. The potential high quality of Atlantic coast herring oils drew favourable comment and considerable interest was shown in the availability of low (100–125) iodine value oils.

The production of marine mammal oil in Canada, some seven million pounds per annum, was discussed by E.B. Young, Department of Fisheries, Ottawa. The outlook for continued profitable whaling in the North Pacific was considered poor, but in the Atlantic a limited expansion of the present industry for large baleen whales was taking place with a favourable long-term outlook. Sperm whales and several species of smaller whales could also be valuable resources. The sealing industry contributes substantially to production of mammal oil (about two million pounds per annum) and is currently the subject of government conservation measures and international negotiation to assure a continued successful industry.

"Fish Oils and Poultry Rations", the topic of J. Biely, University of British Columbia, Vancouver, reviewed the advantages of marine oils as ration additives or residues in fish meals. The addition of antioxidants to fish meals promotes the utilization of this valuable energy source and also facilitates bulk handling of the meal with associated economic advantages. The potential drawback of "fishy" flavour in fowl and hogs fed excessively high levels of marine products were discussed and suggested as areas where research was needed. The factor of price as a deterrent to wider non-edible use of marine oils was emphasized by D. Hey, Harchem Ltd., Toronto. The origin and current status of the joint FAO/WHO Codex Alimentarius was outlined by R.P.A. Sims, Department of Agriculture, Ottawa, although no individual marine oil was traded internationally in sufficient quantities ($>$ 0.5 million metric tons per annum) to qualify for international standards. Dr. Sims presented a new method of characterizing oils based on exclusion of certain characteristics through a simple gas-liquid chromatographic analysis. This was described as more specific than the conventional properties of oils currently the basis of commercial practice.

The meeting concluded with a panel discussion on "Problems in the Edible Utilization of Marine Oils", chaired by L.G. Rupert. The panelists were: R.B. Mitchell, Lever Bros.; D.F. Chalmers, Procter and Gamble; D. Brown and J. Ward, Monarch Fine Foods; E.E. Russell, Swift Canadian; and B. Teasdale and P. Ziegler, Canada Packers. The presentations of the panelists and the subsequent discussion included current purchase standards, consumer acceptance, refining and hydrogenation technology and problems and other factors governing utilization of marine oils. It was generally agreed that present marine oil qualities were adequate, but that some improvement in quality, and greater uniformity of product, perhaps promoted by organization of the producers, would greatly improve the competitive position of marine oil in the edible foods industry. Processing and product stability were not regarded as serious problems but were suggested as areas where research was needed.

Copies of the transcript of the symposium may be obtained free of charge from:

Dr. R.G. Ackman,
Halifax Laboratory,
Fisheries Research Board of Canada,
P.O. Box 429,
Halifax, N.S.

MARGARINE REVIEW

Some Aspects of the Experiences of the Swedish Margarine Industry

Harald Westling, President, Margarinbolaget, Stockholm, Sweden.

The development of consumption habits in Sweden regarding fat has during a long sequence of years been very favourable for margarine and resulted in a state, in which the product today plays a dominant part in the population's fat intake. The pace of this development is most easily illustrated by mentioning that, whereas margarine in 1950 – the first year unaffected by food rationing during and after World War II – accounted for around 45 per cent of the total margarine and butter volume, today's corresponding figure is well over 65 per cent. Looking specifically at the household margarines' share of the consumer market, excluding the bakery and catering trades, the picture is even slightly more favourable . To complete the picture it needs mentioning that other fat products than margarine and butter are of minor importance, having a share of only about six per cent of the total market and within household consumption of as little as around one per cent.

The present price relation between butter and various types of margarine can be illustrated as follows: Consumer price for butter lies around sw.cr. 6.70 per kg. A margarine brand called Flora, which represents the latest step forward in margarine, costs between sw.cr. 6.40 – 6.75 per kg. Another brand, Tre Ess, representing a "normal" super quality costs about sw.cr. 4.75 per kg., and finally the average consumer price of standard margarine ranges between sw.cr. 3.50 and 4.00 per kg. Butter and margarine are noramlly sold in half kg. bricks. This size and type of package covers about 80 per cent of the market. Another five per cent is covered in quarter kg. bricks and the remaining 15 per cent are packed in rigid cups.

A number of different factors have influenced the shift in market shares. The most dominant ones seem to have been the following:

1. Factors Outside the Margarine Industry, Directly Affecting Demand:

Long-term structural changes in employment, meaning that people have left occupations in the agricultural sector for employment in industry. At the beginning of the century the main occupation in Sweden was farming. This fact quite naturally led to negative attitudes towards margarine as a competitive product to butter, and was not only exhibited by the generation which was directly affected by this competition, but also – maybe on a somewhat less conscious level – by the next one. The generation thereafter, however, has taken a much more rationalistic view on the relative merits of the two products.

Changes in status symbols. In a poor country, and Sweden could be considered to be poor until well into the thirties, the standard of living can to a great extent be gauged by the volume and quality of food consumed. In present-day Sweden, differences in the standard of living are mainly expressed by the choice of car and the frequency of holidays spent abroad, and it is an open question whether rather large parts of the population deliberately economize on day-to-day living expenses in order to be able "to keep up with the Joneses". This shift in status symbols also favours a rationalistic approach to the choice between butter and margarine.

The discussion in medical circles regarding differences in nutritional value between various kinds of fat has to some extent given a new dimension to the general public's opinion regarding the relative merits of butter and margarine. Health aspects are influencing the thinking of the consumer. Steadily rising costs of living in the type of full-employment economy which Sweden has represented since World War II, have made it a political must for the government to shift its main interest away from the protection of the producer, which was the main task during the thirties, and over to protection of the consumer. This has made it successively more difficult for the farmer-owned dairy industry to get society approval of its need for support, both in the form of direct subsidies as well as in the form of assured market shares through some kind of limit on margarine production or prohibitive levies.

The above-mentioned factors, reflecting general shifts in habits and attitudes in society over a span of years, would of course have resulted in certain shifts in demand, even if the margarine industry had not been actively seeking new frontiers. It is, however, doubtful whether the changes would have been of more than minor importance without the aid of the following:

2. Factors Within the Margarine and Dairy Industries:

General product quality of margarine has for many years been high. The imposition of the state levies on margarine has made it unattractive to economize in the production by using cheap oils and fats as raw materials, as this would in the long run automatically lead to higher levies to be paid to the state. Innovations in the refining of oils and in the manufacturing processes for margarine have thus most often led to a higher quality of the final product, and only in a few instances to the usage of cheaper ingredients with the plan to keep output quality constant. These conditions have prevailed for about twenty years and have gradually increased the general product quality. In accordance with this, they have also improved the product image in the minds of consumers as well as in dietetic circles.

The oligopolistic market conditions have favoured product differentiation and thus product development as an effective means of competition. Three decision-making units share together about 90 per cent of the Swedish fat market. The Swedish dairies top organization, SMR, has for butter the commercial responsibility for making the most out of about 35 per cent of the market. Margarinbolaget, which is a joint venture between Unilever and Swedish interests, has about 40 per cent of the market, and the Swedish Co-op factory, whose products are sold only through Co-op outlets, has about 15 per cent. The remaining 10 per cent is divided between about five small Swedish companies and imports.

It should be noted that we hold the view that there exists only one market in which butter and various margarine brands compete, and not, as seems to be the case in many countries, two markets, one for butter and one for margarine. This "Common Market" philosophy is of course a reflection of the consumers' relative willingness to regard the various products as close substitutes for each other.

The quality tradition and the urge to find other competitive measures than price-cutting was introduced in the twenties, when the Co-op factory was built and Margarinbolaget was founded as a result of a merger between the leading privately-owned margarine factories. Gradually there was a reduction in the number of brands as well as in the number of distribution depots. This in turn had an effect on product quality as noticed by the housewife, since the rate of turnover increased very sharply.

While the main task of the various companies' sales organizations had previously been to try to overstock the food retailer in order to block the way for the competition, it now became important to keep stocks in the distribution channels rather low and to watch how well the principle "first in – first out" was followed. This happened because the main competitors, at that time the local dairies, sold only fresh butter, since refrigerated storage had not yet become a commercial reality.

The commercial possibilities for product development were of course barely existing during the years 1940/1950. In 1943, however, new manufacturing methods were utilized in a new standard margarine by Margarinbolaget, and led to a better taste in the final product which soon dominated the market. As a matter of fact, it was the one and only product sold by Margarinbolaget on the consumer market until fall 1956. It was further improved, as far as texture was concerned, when the votator process was introduced in 1953. Similar developments within the Co-op factory led to a single product policy there too, which lasted until 1958.

During the middle of the fifties a relaxation of state regulations regarding choice of oils made it possible to manufacture a margarine of even higher taste and texture qualities than hitherto realized. Up to this time regulations had made it compulsory to use only rapeseed oil in addition to coconut and hardened marine oils.

By this time the commercial need for product differentiation and market segmentation had become apparent. Margarinbolaget utilized this opportunity by adding a new margarine of superior quality to its production, which was to find its volume market somewhere between standard margarine and butter. Starting in 1960, this product was made from high quality fats of good keepability and very good aroma qualities on the basis of an all-vegetable formula (cotton, coconut and hardened cotton) and has since then been heavily advertised on a theme built around modernity and prestige. Occasionally couponing has been used to attract new customers, but these operations have always been very closely linked to the main theme, which features actual housewives using the product in the preparation of various dishes.

The product has been very successful and has acquired over the years up to approximately a third of Margarinbolaget's volume of about 15 per cent of the total market. The Co-op factory followed suit and reformulated its product, which accounts today for about 20 per cent of its own volume in this quality category.

It was the main aim of the two super qualities on the market between 1956 and 1965 to resemble butter as closely as possible. In addition, special qualities were stressed which put them a step ahead of butter in the minds of health-conscious people, namely a relatively high percentage of linoleic acid. In the beginning of the sixties, however, Margarinbolaget has started to work on a project which was planned to result in a product designed to be considered as superior to butter by the general puclic, not simply only "as good as". This work resulted in 1965 in the test marketing of a soft margarine, spreadable directly when taken from the refrigerator, and of excellent taste and packed in a rigid cup. Launched this year on a national scale, this product has immediately grown bigger than the first superbrand at its best, without, however, seriously affecting its volume. The net result thus is that about half of Margarinbolaget's volume consists of margarines of superior qualities, sold as quality products and at prices considerably higher than those of standard margarine. Also, at this time, the Co-op factory has tried to manufacture a similar product and on the total market these superbrand margarines account for about 40 per cent of the household margarine volume and 25 per cent of total butter and household margarine consumption.

Technical Aspects

From a technical standpoint the main efforts designed to increase margarine quality have been directed towards the problem of avoiding oxidation. These efforts have ranged from the choice and the handling of the raw materials to research into the consumer's handling of the final product.

Raw Materials

Much stress has been put on the content of primary and secondary oxidation products in the oils and fats used in margarine manufacture. In the case of many oils and fats this has resulted in the exclusion of some potential suppliers.

Regarding rapeseed, there exists a voluntary agreement between the margarine industry as a whole and the state, under which the industry buys at fixed prices as much rapeseed oil as corresponds to 38 per cent of the margarine production. The industry is free to use it or to export it at current world market prices. With financial support from the margarine industry, efforts are being made by the the Swedish Seed Association to improve rapeseed with regard to the fatty acid composition. The main objective of these efforts is to lower the content of erucic acid, increase that of linoleic acid and, if possible, decrease the linolenic acid fraction.

In general, rapeseed oil is currently used in liquid form in the standard margarines and in a hardened form in the superior qualities.

Refining and Manufacture

Here the problem of avoiding contact with oxygen and light has been solved primarily by combining oil refining as closely as possible with the margarine manufacturing plants, which in the factories belonging to Margarinbolaget started in the forties. The goal was that all factories within the company should have refineries of their own on the premises and a closed transportation system for the oils between all refining stages and between refining and margarine manufacturing. Secondly, the introduction of the votator principle for the crystallization in 1953, and the simultaneous introduction of automatic packaging machines, linked to the votators by a closed system, resulted in a product of higher quality leaving the factories.

Packaging and Distribution

In the middle of the fifties Swedish food retailing started the big conversion to self-service. Margarine, which under the previous conditions was taken out of its delivery carton the moment the customer asked for it, was now exposed to light in refrigerated cabinets, showing the products. This fact combined with the above-mentioned opportunity to use other oils than rapeseed oil in margarine in the development of brands of superior quality, called for more protective packaging materials. Aluminum foil laminated to parchment paper was introduced in these superbrands from the beginning in 1956 and this packaging material has up to the present completely dominated the market.

The latest step in package improvement is the rigid cup which, similar to aluminum foil, is an effective barrier against air and light, and furthermore makes it possible to sell a softer margarine capable of spreading easily at low temperatures. On top of these qualities it presents the housewives with the opportunity to get a package they can use in their home when consuming the product. It is not just a wrapper in which to carry the product home from the retailer and to store before use. This principle has been tested in Sweden since the beginning of the sixties, and in 1965 and 1966 achieved a breakthrough.

Product distribution and shelf-life have for a long time been of great interest. It seems to be sufficient to state here that the average age of both the products of Margarinbolaget and of the Co-op factory is normally less than one week at the time of delivery to the retailers. Average stocks in the shops cover the requirements of sales for between seven and 10 days Accordingly, the housewife can as a rule count on obtaining products in very good condition.

Soft Margarine

by E.M. Deck, Vice-President, Product Development,
Anderson, Clayton & Co., Foods Division, Dallas, Texas.

Soft, spreadable margarine packaged in plastic tubs is a new entry into the premium-priced margarine field.

The high-density polyethylene thermoformed tubs – two half-pound tubs with plastic lids – are packaged in a linerless, zip-open, folding carton. The tubs are table-ready and no serving tray or dish is required. The tubs are reusable by the homemaker.

The soft margarine is spreadable when taken directly out of the refrigerator or freezer – a characteristic that has a great convenience appeal to consumers over conventional hard or stick margarines packaged in quarter-pound sticks with messy wrappers.

The soft margarine contains high percentages of liquid (nonhydrogenated) vegetable oils (up to 1-1/4 cups of oil per pound of margarine), such as safflower, cottonseed, soybean and corn oil – and enough hydrogenated or hardened fats to give a desirable consistency to the margarine. The liquid vegetable oils provide a high percentage of polyunsaturated fats and a low percentage of saturated fats.

Range Polyunsaturated to Saturated Fat per 100 Grams Margarine

Brand	Polyunsaturated (Grams)	Saturated (Grams)	P/S Ratio
Soft Margarine			
A	44	11	4.0 to 1
B	35	14	2.8 to 1
C	30	16	1.9 to 1
Stick Margarine			
D	26	15	1.7 to 1
E	23	16	1.4 to 1

The first safflower oil soft margarine has a polyunsaturated fat to saturated fat (P/S) ratio of four to one, or higher. A diet high in polyunsaturated fats and low in saturated fats is believed to be a factor in reducing blood cholesterol levels.

The soft margarine has flavour advantages over hard stick margarines, as it melts more rapidly and releases more quickly its good, butter-like, fresh flavour. The convenience of use, the higher P/S ratio of the fat in the margarine and the great improvement in flavour of soft margarine is a boon to the margarine industry in the USA. New and broader markets for margarine have been opened.

The total sales of margarine through food stores in the USA in 1965 were about 1.5 billion pounds. Total premium-priced margarine was about 20 per cent of the market in 1965 and is expected to be about 26 per cent in 1966 – and possibly 32 per cent in 1968. Soft margarine is estimated at about 10 per cent of the market in 1966 and probably 15 per cent in 1968.

The consumption of premium-priced stick margarine and soft margarine is growing at a faster rate than the total consumption of margarine, which has been at a rate of about three per cent annually.

The Importance of Margarine in the Canadian Economy

by Robin E. Merry
Director, Lever Brothers Limited, Toronto

Although margarine has only been available in Canada for the last 18 years, it is not always recognized that this nutritious and economical food was first developed in France about 100 years ago. From a caloric point of view margarine is equal to butter and its composition can be designed to have nutritional value superior to that of butter.

Consumption of edible fats is closely related to economic and climatic conditions. In tropical countries the human body needs less fuel and therefore less fat, but more fat is added to the diet as the level of prosperity rises and this is particularly so in northern latitudes. A study in 1949 comparing national income, as computed by the United Nations Organization, with fat consumption illustrates this relationship.

Income	Per Capita Consumption of Fats
Under $100	7.9 lbs.
Between $100 and $300	16.2 lbs.
Between $300 and $500	29.1 lbs.
Over $500	42.7 lbs.

There is thus a need to ensure adequate world supplies of edible fats and oils for the world's growing population at the lowest possible cost. Since margarine can be made from suitably hydrogenated vegetable oils, a wide variety of these edible oils has been employed in its manufacture. New varieties of oilseeds have been developed, which can be grown successfully in northern countries with short growing seasons, and Canada has become today a major producer and exporter of edible oilseeds.

Vegetable Oilseeds are Efficient Fat Producers

Unfortunately, animals are inefficient with respect to conversion of nutrients. This is illustrated by a US Department of Agriculture study of a few years ago which showed that per acre, the cow produced 46 lbs. of butterfat as opposed to 150 lbs. of vegetable fat from soybean production. In this connection, it should be noted that soybean meal is by far the most important single source of protein concentrate for the poultry and livestock industry.

As the world's population continues to explode, future generations will demand the maximum amount of nutrition from each acre of arable land and herein lies an opportunity for a vastly increased oilseed agriculture in Canada.

Fat Consumption in Canada

Canadians are high consumers of fats, butter supplying a little less than half of the total intake. Consumption figures for the last 15 years show, however, that butter has lost more to shortening and other oils than to margarine.

Consumption of Fats

Canada – lbs. per capita

	1951	1960	1965
Margarine (fat basis)	6.0	7.4	7.0
Butter (fat basis)	18.0	13.6	15.1
Lard	7.4	7.2	6.2
Shortening	8.2	9.4	9.7
Other Fats and Oils	2.3	3.9	4.6
TOTAL	41.9	41.5	42.6

The importance to the economy of the edible fat industry is indicated by the growth of demand for margarine and shortening in the above period.

Apparent Disappearance of Fats ('000 lbs.)

	1951	1965	% Increase
Margarine	104,170	170,758	+ 64%
Shortening	114,860	190,371	+ 65%
Lard	103,700	121,000	+ 17%
Other fats and oils	32,362	89,606	+ 177%
Butter	315,480	369,310	+ 17%
TOTAL	670,572	941,045	+ 40%

Canadian dairy herds have remained static at some 3,000,000 milk cows for many years, and there has been some increase in production per cow through advanced feeding and breeding programs in recent years. It is safe to say that the introduction of margarine has helped to avoid a shortage of table fats in Canada in the last decade.

Margarine in Canada

It was inevitable that there would be strong resistance to the introduction of margarine in Canada. While margarine has been available in most European countries and in the USA for many years, it was prohibited in Canada for over 60 years – from 1886 to 1948.

Through the efforts of the late Senator Euler who fought from 1917 on for "freedom of choice in the market place", the Supreme of Canada finally decided in 1948 that the prohibition of the sale and manufacture of margarine was "court vires" the Parliament of Canada.

In the absence of provincial laws relating to this matter, most provincial legislatures adopted an old law dating from the 1920's which limited the amount of yellow colouring that could be added to margarine so that it could not be mistaken for butter. The sale of margarine was prohibited in Quebec and Prince Edward Island.

Newfoundland joined Canada about the same time, and one of the terms of Confederation was that the people of Newfoundland should be able to continue to buy pale yellow margarine. At the same time, it was agreed that the federal sales tax, then 12 per cent, would not apply on sales of margarine in Newfoundland.

Today, margarine is the only basic food on which most consumers pay the current federal sales tax, amounting to some $6,000,000. This federal law applies everywhere except in Newfoundland.

In 1952, Mrs. Tillie Ralston, a member of the Legislature of British Columbia, introduced and had approved a bill to permit the sale of margarine in any shade of pale yellow. It was only in 1961 that Manitoba changed its law to permit the sale of margarine either light cream or dark yellow – the pale yellow shades being reserved for butter. Since then, all provinces except Quebec have adopted similar legislation.

It is interesting to note that a heavy federal sales tax on margarine was withdrawn in the United States in 1950 and by 1953 state laws had been modified to permit the sale of pale yellow margarine in all but two states.

The Future For Margarine

Recognizing the social need for margarine as a modern, nutritious and economical fat made from domestically grown oilseeds, the industry formed the Institute of Edible Oil Foods some fifteen years ago. Today, its members include practically all manufacturers of margarine, crushers of oilseeds and refiners of edible oils.

The Institute has always appreciated the importance of dairying to the economy but has also endeavoured to encourage the removal of discriminatory margarine legislation, so that they may be able to sell it in the pale yellow colour that consumers prefer – and without the federal sales tax.

The Institute has recognized the advances made by Canadian scientists in the field of agricultural research on oilseed crops and has supported this research financially. The Institute proposes the removal of restrictions on the sale of foods made from these oilseeds. This will benefit the economy of the country – the growers of oilseeds, crushers, refiners, manufacturers and consumers alike.

Increased production of margarine made from Canadian raw materials, together with available supplies of Canadian butter can meet the table fat needs of our growing population, and will help the economy while helping reduce the rising cost of living.

FOREIGN INDUSTRY REVIEW

The following two reviews on the fats and oils industries of Japan and West Germany are based on data supplied by the Canadian Trade Commissioners in Tokyo and Bonn.

The Japanese Fats and Oils Industry (MT – metric tons)

Oilseed crushing capacity in Japan amounts to 18,812 metric tons per day, more than six times the Canadian capacity, and is spread over 860 plants, as compared with 10 in Canada. However, 36 plants have two thirds of Japan's crushing capacity and in 1965 accounted for 80 per cent of all oilseed crushed. Soybeans were crushed nearly exclusively in the larger plants, having a capacity above 100 metric tons per day, while only 44 per cent of all rapeseed was crushed in these mills. In fact, 50 per cent of all rapeseed was crushed in plants of less than 50 metric tons per day capacity.

Japanese Oilseed Crushing Capacity (1965)

Capacity	No. of Plants	Total Crushing Capacity (MT per day)
Under 10 MT per day	677	1,695
10 – 50 MT per day	122	2,531
50 – 100 MT per day	25	1,773
Over 100 MT per day	36	12,813
Total	860	18,812 MT per day

Quantity of Oilseeds Processed – 1965 (MT)

Plant Capacity	Soybeans	Rapeseed	Other	Total
Under 10 MT per day	–	48,000	10,000	58,000
10 – 50 MT per day	2,000	77,000	161,000	240,000
50 – 100 MT per day	18,000	15,000	206,000	239,000
Over 100 MT per day	1,232,000	111,000	794,000	2,137,000
Total	1,252,000	251,000	1,171,000	2,674,000

It may be assumed that a 100 per cent utilization is equivalent to 330 days of crushing per year. On that basis, Japan's total capacity is 43 per cent utilized, as compared with 87 per cent in Canada. The following calculation shows that the degree of utilization increases with capacity.

Daily Capacity	Per Cent Utilization
Under 10 MT per day	10%
10 – 50 MT per day	29%
50 – 100 MT per day	41%
Over 100 MT per day	50%

Since 1961, both the production and consumption of edible oil products have undergone a spectacular growth. Total production has increased by 30 per cent while consumption grew by 68 percent. The figures of the following table are not entirely comparable, since butter and margarine statistics are not given on an oil basis. Nevertheless, the 83 per cent increase of "Margarine, Shortening & Lard" and the 98 per cent increase of butter consumption point to a gradual change in the food consumption pattern in Japan.

Edible Oil Products (thousand MT)

	Production				Consumption			
	Vegetable	Animal*	Butter	Total	Cooking, Salad & "Tempura" Oil	Margarine, Shortening & Lard	Butter	Total
1961	453	174	13.2	640	359	121	13.6	494
1962	492	195	18.5	706	391	142	19.1	552
1963	559	176	22.4	757	461	168	22.5	652
1964	590	158	23.2	771	510	185	23.4	718
1965	625	165	24.0	814	519	197	25.0	741
1966 (Est.)	692	113	27.0	832	580	222	27.0	829

*Excludes butter.

Retail prices generally have not changed much during the past five years.

Retail Prices for Edible Oil Products in Tokyo

(Yen)*

	Soybean Oil (per 1.8.1)	Salad Oil (per 500 g.)	Margarine (per 225 g.)	Butter (per 225 g.)
1961	323	120	80	168
1962	293	200	80	178
1963	313	200	80	180
1964	308	200	80	180
1965	323	200	80	180
1966(1)	330	180	97	165 - 220

*100 yen equals $0.30.

(1) Representative prices in Tokyo, November 30, 1966.

Quality Standards

Standards issued by JAS, Japan Agricultural Standards, stipulate a maximum moisture content of 17 per cent and a minimum fat content of 80 per cent for margarine. Colour restrictions apparently do not exist.

Soybean salad oil is required a maximum Lovibond colour of 25 yellow and 2.5 red. The iodine value may range from 123 to 142.

Oilseed Imports

None of the oilseeds listed in the following table were exported during the years under review. Soybean imports account for more than two thirds of all Japanese oilseed imports and amount to more than 18 times the volume of rapeseed. However, rapeseed imports have grown five-fold within five years, and 1966 will see a considerable further increase, largely consisting of Canadian rapeseed.

Japanese Oilseeds Imports

(Thousands of MT)

	Soybean	Rapeseed	Cottonseed	Safflower	Copra	Sesame	Palm Kernel	Flax Seed	Castor Oilseed	Other
1961	1,158	20	100	73	80	22	26	105	42	74
1962	1,293	37	150	63	89	28	29	82	35	93
1963	1,544	88	168	196	108	33	26	98	38	97
1964	1,607	76	206	199	86	34	25	95	34	82
1965	1,847	101	217	113	94	33	22	103	40	104

Imports of edible oils have been relatively insignificant. As a rule, no more than 500 metric tons of soybean oil have been imported annually. Cottonseed oil imports dropped to 2,100 metric tons in 1965, and lard imports dropped to 5,000 metric tons from a high of 8,700 metric tons in 1961.

Among edible oil exports, only soybean oil and rapeseed and mustard oil combined have exceeded the 1,000 metric tons level during the past three years. In 1965, soybean oil exports amounted to 5,580 metric tons and rapeseed plus mustardseed oil exports reached 3,634 metric tons.

The West German Fats and Oils Industry

Oilseed Crushing and Refining Capacity (MT – metric tons)

West Germany's 19 oilseed mills have an estimated total capacity of 3 million MT, and processed 2.2 millions MT of oilseeds (approx. 73 per cent utilization) in 1965. The share of soybeans was approximately 1.4 million MT. In addition, there are 22 oil refineries, most of which are integrated with the crushing plants. Imports account for more than 90 per cent of all seeds crushed.

Production and Consumption of Edible Oil Products in 1965

(Thousands of MT)

	Production	Consumption	Average Retail Price per Kg.
Butter	484	479	7.81
Margarine	582	574	2.89
Fats (plates)(1)	69	68	3.05
Oils	227	218(2)	2.34
Lard	18	14	2.10-2.50

(1) Coconut fat.
(2) 130,000 MT for direct consumption; 88,000 MT processed by food industry.

Converted to Canadian terms, the German butter price is 96¢ per pound, the margarine price 35¢ per pound, cooking fats 37¢ per pound, oils 29¢ per pound and lard 26¢ to 31¢ per pound.

Average annual retail prices for butter rose from DM 6.52 in 1960 to DM 7.50 per Kg in 1964 (from 80¢ to 92¢ per pound). Margarine prices rose as follows during the same period:

a) Top quality (Delikatess) from 32¢ to 34¢ per pound;

b) Medium quality (Spitzensorte) from 27¢ to 28¢ per pound.

Vegetable oils rose by 2¢ per pound, while coconut plates, used for frying and cooking, showed no change.

As shown in the following table, German butter consumption increased from 1958/59 till 1963/64 and declined in 1964/65. Margarine consumption reached a low in 1962/63 and has slowly risen since then. High quality margarine brands have recently received special emphasis.

Consumption

	Margarine		Butter	
Year	Thousands of MT	Kg per capita	Thousands of MT	Kg per capita
1958/59	620	11.6	419	7.8
1959/60	624	11.3	432	7.8
1960/61	599	10.7	478	8.5
1961/62	568	10.0	498	8.8
1962/63	555	9.7	515	9.0
1963/64	567	9.8	516	8.9
1964/65	580	9.9	497	8.5

In 1964/65 West German margarine consumption was equivalent to 21.8 pounds per capita and butter consumption to 18.7 pounds per capita.

In terms of actual visible fat consumption, the total per capita weight rose from 55.9 pounds to 56.5 pounds during the same seven-year period. In 1964/65 butter and margarine accounted for 58 per cent of this quantity, slaughter fats for 23 per cent, liquid oils for 14 per cent, and what might be termed shortenings for less than five per cent.

The total fat consumption in Germany does not indicate a trend towards a substantial change, having risen by about 10 per cent from 1,363,000 MT to 1,505,000 MT during the seven-year period ending in 1964/65. The butterfat component increased its share by 20 per cent and the relatively minor liquid oil component by 36 per cent. It seems that these structural changes are characteristic for a state of prosperity rather than the consequence of medical recommendations to switch to liquid oils.

Quality Requirements:

a) **Margarine:** Apart from a minimum fat content of 80 per cent, margarine contains 19.0 – 19.5 per cent water (skim milk) and 0.5 per cent other legally permitted ingredients. The three grades of margarine are distinguished by their different physical characteristics. Grade I (Delikatess) must conform with such requirements as: good spreadability, no oiling-out, buttery aroma and flavour, good melt-in-the-mouth, etc. Grade II (Spitzensorte) may be poorer in spreadability, melt-in-the-mouth or even "buttery aroma". Grade III (Tafelmargarine) may be of poorer quality for all specifications.

The top grade contains generally only vegetable oils, especially palm kernel and coconut oils (often interesterified), as well as a liquid and hydrogenated fraction of other oils. Grade II may contain whale oil, and Grade III contains higher proportions of palm oil, soybean oil and marine oils. Rapeseed oil is not used in margarine production.

b) **Salad and Cooking Oils:** Apart from olive oil, no distinction is being made between salad and cooking oils. General requirements include a bland odour and flavour, and an FFA value below 0.1 per cent. In Northern Germany a strongly bleached, nearly water-white oil is preferred, while an almost yellow colour is desired by the Southern German market.

Some brands specially advertise the nature of the oils used, e.g., peanut, sunflowerseed oil, etc., but others do not mention the identity of the oils, which may be made from soybean oil or rapeseed oil or a mixture of the two.

c) **Shelf-Life:** Some margarine manufacturers exchange their products in retail stores after three weeks. Liquid oils, if packaged in cans, may keep for six months, or even for one year in the case of peanut oil.

Rapeseed Situation

Until the enforcement of the Common Market policy for oil seeds in July 1967, the Federal Republic of Germany will guarantee a price for rapeseed to the agricultural producer amounting to DM 660 per MT ($178/MT). Including a trade margin of DM 85 per MT, the purchase price of the processing industry amounts to DM 745, i.e., about $201. The use of the domestic rapeseed crop is guaranteed by the obligation of the producers of margarine, table oils and fats, to mix rapeseed oil with their products, the admixture rate being 10 per cent by weight of the fats processed into margarine and other edible fat products. This obligatory use is suspended when the domestic harvest has been disposed of. The government pays the oil mills, margarine and edible oil producers a premium (on a sliding scale) for prompt use of the harvested rapeseed. The premium amounts to DM 90 to DM 20 per MT. Further subsidies totalling up to about DM 40 for storage and an aid for long distance freight rates may be paid by the Federal Government in certain cases.

On this basis the purchase price to the processor will amount to DM 655 per MT or appropriately $4.00 per bushel.

Although margarine producers must buy 10 per cent of their raw material requirements as domestic rapeseed oil, they often do not use this oil, but sell it for cooking oil purposes. One objection raised against the use of rapeseed oil in margarine formulations referred to an alleged "harsh" after-taste resulting from the phosphatides present in the oil. In cooking oils this problem was claimed to be of lesser importance. This characteristic of the oil was said to apply particularly to German-grown rapeseed, and that research may overcome this disadvantage in the future.

German Trade in Oilseeds, Fats and Oils

Imports of oilseeds rose from 1.2 million MT in 1958/59 to 1.8 million MT in 1964/65. Imported soybeans accounted for 1.3 million MT, copra for 242,500 MT, palm kernel for 126,000 MT and rapeseed for 101,000 MT in 1965.

In 1965, 33,000 MT of Germany's rapeseed imports came from Canada, 29,000 MT from Sweden, 24,100 from Denmark and 10,200 MT from France. During the first 10 months of 1966, Germany purchased MT 46,700 of rapeseed from Canada out of total imports of 88,000 MT.

Total imports of vegetable fats and oils increased from 232,100 MT in 1958/59 to 315,200 MT in 1964/65. Palm oil, cottonseed oil, sunflowerseed oil, coconut oil and peanut oil accounted for the bulk of all edible oil imports. Compared with the import volumes, exports of oilseeds and of vegetable oils are relatively insignificant. In 1964 and 1965 rapeseed oil exports topped all other vegetable oils, amounting to 14,293 MT and 24,534 MT respectively.

CONVERSION FACTORS

OILSEEDS: Statutory Weight per Bushel and Average Volume per Short Ton

	Pounds	Cubic Feet
Flaxseed	56	45.9
Soybeans	60	42.8
Rapeseed	50	51.4
Sunflower Seed	30	85.7
Mustard Seed	–	51.4

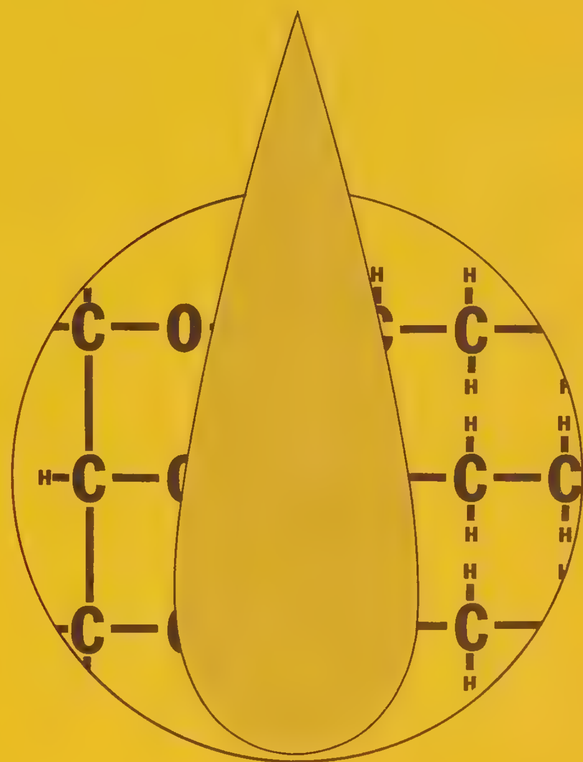
OILSEED PRODUCTS

	Extraction Rate (Percent)	Yield Per Bushel (Pounds)	Weight of Gallon (Pounds)
Flaxseed, Crude Oil	35.4	19.8	9.3
Linseed Meal	61.7	34.6	–
Soybeans, Crude Oil	17.7	10.6	9.2
Meal	80.0	47.3	–
Rapeseed, Oil	37.5	18.75	9.1
Meal	57.5	28.75	–
Sunflower Seed, Oil	33.0	10.0	9.2
Meal	33.0	9.3	–
Mustard Seed, Oil	19.0	–	–
Meal	70.0	–	–

Marine Oils: 1 Imperial gallon = 9.25 lbs.

Roger Duhamel, F.R.S.C., Queen's Printer and Controller of Stationery, Ottawa, 1967

FATS AND OILS IN CANADA/SEMI ANNUAL REVIEW



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DEPARTMENT OF INDUSTRY FOOD PRODUCTS BRANCH DECEMBER 1967

DEPARTMENT OF INDUSTRY

FATS & OILS IN CANADA

Semi-Annual Review

DECEMBER 1967

Prepared by: Edible Oils Section
Food Products Branch
Department of Industry
Ottawa, Canada.

Vol. 2, No. 2

INTRODUCTION

This is the fourth issue of "Fats and Oils in Canada", a semi-annual review, prepared by the Food Products Branch. It contains in one publication, statistical information of relevance to the fats and oils industry in Canada, as well as an interpretation of these data.

In addition, "Fats and Oils in Canada" reports on significant technical and economic developments in Canada and abroad which are likely to affect the Canadian industry.

The Canadian statistical data are based on material provided by the Dominion Bureau of Statistics, the Department of Agriculture, the Department of Fisheries, and the Department of Trade and Commerce. Additional statistics were obtained from a variety of domestic and foreign sources.

"Fats and Oils in Canada" is meant to be a working document for people concerned with the development of the Canadian fats and oils industry. Suggestions and comments on this publication are welcome.

If you wish to have your name or that of your company added to our mailing list, please write to:

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Ottawa 4, Canada.

December, 1967.

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CANADIAN REVIEW

1. Canadian Production of Fats and Oils

The total production showed no significant change in 1966 compared with 1965. However, in the vegetable oil sector, rapeseed oil output increased by nearly 34 million pounds, while sunflowerseed oil production declined by 2.2 million pounds.

Production of lard and herring oil decreased in 1966 compared with 1965, but as a result of the growth in rapeseed oil output, the total edible oil production increased from 734 million pounds to 749 million pounds.

The inedible fats and oils sector also showed a moderate decline in output from 278 million pounds to 267 million pounds.

2. Canadian Imports of Fats and Oils

Total imports rose from 404 million pounds to 482 million pounds during this period, again largely as a result of the increase in vegetable oil imports for the manufacture of margarine, shortenings and salad and cooking oils. This area accounted for an increase of 50 million pounds.

The increase in butter oil imports can be traced to shipments which were re-exported, and therefore never entered the Canadian consumer market.

3. Canadian Exports of Fats and Oils

The apparent increase in exports results from oilseed shipments. Actual exports of fats and oils have decreased, especially in the marine oil and linseed oil sectors.

Although the preparation of a complete supply and disposition table for fats and oils has been left out, Tables 1, 2 and 3 will help the reader to analyze developments in areas of particular interest. It seems clear that the most significant conclusion is the considerable increase in per capita consumption of edible fats and oils, which may have amounted to between two and three pounds in 1966.

TABLE 1

Canadian Production of Fats and Oils

(thousands of pounds)

	1963	1964	1965	1966
Primarily Edible				
Vegetable Oils:[1]				
Soybeans (oil equivalent)[2]	53,000	74,000	85,000	91,000
Soybean oil[3]	186,750	200,318	198,588	197,867
Rapeseed (oil equivalent)[4]	156,700	248,000	427,500	478,000
Rapeseed oil	30,711	34,116	51,808	84,447
Sunflowerseed (oil equivalent)[5]	12,000	10,000	10,000	10,000
Sunflower seed oil	2,368	6,699	6,658	4,430
Total[6]	219,829,	241,133	257,054	286,744
Animal Fats:				
Edible tallow	42,130	49,588	49,950	48,370
Lard	100,038	108,177	96,769	86,302
Butter (as butter oil)[7]	285,000	285,000	273,000	270,500
Total	427,168	442,765	419,719	405,172
Marine Oils:				
Herring	54,200	49,230	48,890	44,397
Seal	1,534	1,270	2,350	3,294
Whale	6,500	9,800	6,198	9,361
Total[8]	62,234	60,300	57,438	57,052
Total Edible Oil Production	709,231	744,198	734,211	748,968
Primarily Inedible				
Flaxseed (oil equivalent)	419,000	402,000	553,000	468,000
Linseed oil	46,733	58,935	54,858	48,547
Inedible tallow	174,471	198,653	204,392	194,113
Grease, other than white	5,286	5,951	4,846	3,104
Other oils and fats[9]	8,147	7,792	6,585	10,174
Marine oils	8,820	9,017	7,545	10,919
Total Inedible Oil Production[10]	243,457	280,348	278,226	266,888
Total Edible and Inedible Fats and Oils Production (excluding oil equivalents of oilseeds)	952,688	1,024,546	1,012,437	1.015,856

Source: Based on DBS data.

(1) Corn oil and cocoa butter not included, since production data are not published. Based on consumption and import volumes, domestic corn oil production in 1966 was estimated at approximately 8 million pounds.

(2) Oil equivalent of soybeans: used 17.7 per cent as conversion factor. Actual recovery varies from year to year, amounting to 16.5 per cent in 1966.

(3) Soybean oil production is based to approximately 75 per cent on imported beans.

(4) Oil equivalent of rapeseed: used 37.5 percent as conversion factor. Actual yield amounted to 39.4 per cent in 1966.

(5) Oil equivalent of sunflower seed: used 33 per cent as conversion factor. Sunflower seed production includes substantial part of birdseed and confectionary varieties.

(6) Includes only edible vegetable oils produced domestically.

(7) The animal fat total includes the oil equivalent of butter, but not total domestic milk fat production.

(8) Salmon and redfish oil suitable for human consumption could not be broken out statistically and small amounts are probably included under "Marine Oils" in the inedible section, which consists mainly of offal oils and sun-rotted liver oils.

(9) Includes white grease, neatsfoot oil, oleo oil, oleo stearin, oleo stock, etc.

(10) Excludes oil equivalent of flaxseed, for which a conversion factor of 35.4 per cent had been used.

TABLE 2

Canadian Imports of Flats and Oils

(thousands of pounds)

	1963	1964	1965	1966
Primarily Edible				
Vegetable Oils:				
Soybeans (oil, equivalent)	150,500	194,200	168,500	168,000
Soybean oil	29,613	34,505	29,946	24,342
Cottonseed oil	38,528	37,422	47,646	32,225
Corn oil	(1)	17,067	14,377	20,308
Peanut oil	18,580	9,647	9,247	31,555
Coconut oil	37,845	39,750	39,618	42,641
Palm oil	25,483	13,112	18,913	26,761
Palm kernel oil	8,080	7,327	9,877	9,182
Olive oil	1,912	3,705	2,731	3,371
Cocoa butter	11,766	13,157	13,185	15,545
Vegetable Oils and Flats(2)	28,429	5,256	7,488	38,644
Vegetable Cooking Fats and Pack Salad Oils	(3)	4,143	9,254	7,714
Margarine and Shortening	4,447	5,129	3,526	4,496
Total(4)	355,173	384,420	374,308	424,804
Animal Fats:				
Lard	17,133	16,001	20,734	28,439
Butter (oil equivalent)	–	–	1,350	18,950
Total	17,133	16,001	22,084	47,389
Marine Oils:				
Fish and Marine Animal oil(5)	24,165	980	7,981	10,078
Whale and Spermaceti	648	(6)	(6)	(6)
Total	24,813	980	7,981	10,078
Total Edible Oils and Fats	397,119	401,401	404,373	482,271
Primarily Inedible				
Flaxseed (oil equivalent)	21	1,290	123	24
Linseed oil	110	–	–	–
Castor oil	5,948	5,438	6,778	4,627
Oiticica oil	448	246	204	149
Tug oil	2,217	2,860	2,142	2,508
Inedible tallow(7)	5,247	8,680	8,007	7,002
Animal oils and fats	3,224	1,337	771	804
Grease(8)	29,877	23,589	15,308	10,356
Fish liver and visceral oil	1,039	105	261	130
Total Inedible Oils and Fats	48,131	43,545	33,594	25,600
Total Edible and Inedible Fats and Oils Imports	445,250	444,946	437,967	507,871

Source: Based on DBS Data.

(1) Corn oil was listed with other oils until 1963, and listed separately starting in 1964.

(2) This class included corn oil and refined salad oils until 1963.
Sunflowerseed oil and rapeseed oil accounted for the bulk of the volume in 1966.

(3) Listed under Vegetable Oils and Fats until 1963.

(4) Vegetable oil total includes the oil equivalent of imported soybeans.

(5) Includes Icelandic herring oil and menhaden oil; and also whale oil starting in 1964.

(6) Included under Fish and Marine Animal Oil starting in 1964.

(7) This class probably includes some edible tallow.

(8) Grease, including wool grease and lanolin.

TABLE 3

Canadian Exports of Fats and Oils

(thousands of pounds)

	1963	1964	1965	1966
Primarily Edible				
Vegetable Oils:				
Soybeans (oil equivalent)	17,280	20,400	32,200	34,800
Soybean oil	45,373	25,017	34,727	29,194
Rapeseed (oil equivalent)	116,400	68,200	199,500	261,500
Rapeseed oil	122	391	5	–
Sunflowerseed (oil equivalent)	4,720	3,460	4,540	6,200
Margarine and shortening	121	104	168	228(1)
Vegetable Oils and Fats	2,283	458	677	543
Total(2)	186,299	118,030	271,817	332,465
Animal Fats:				
Lard	23	34	31	(1)
Butter (oil equivalent)(3)	4,540	29,600	2,370	1,300
Total	4,563	29,634	2,401	1,300
Marine Oils:				
Herring oil	947	23,291	7,578	790
Whale oil	4,918	3,161	4,526	1,425
Total	5,865	26,452	12,104	2,215
Total Edible Fats and Oils (including oil equivalents of oil seeds)	196,727	174,116	286,322	335,980
Primarily Inedible				
Flaxseed (oil equivalent)	229,000	294,000	319,000	400,000
Linseed oil	8,039	18,996	22,518	12,359
Inedible tallow	108,233	137,872	135,564	136,308
Marine oils(3)	11,361	8,240	7,589	6,687
Animal Fats and oils	171	159	129	5,110
Total Inedible Fats and Oils(2)	356,804	459,267	484,800	560,464
Total Edible and Inedible Fats and Oils	553,531	633,383	771,122	896,444

Source: Based on DBS data.

(1) Starting in 1966 lard exports are included with margarine and shortening export data.

(2) Oil equivalents of oilseeds are included in all totals.

(3) Butter exports have been converted to butter oil equivalents at 81 per cent. More than 75 per cent of the butter exports were destined for St. Pierre and Miquelon in 1966. Substantial amounts of butter oil exports to Great Britain from surplus stocks in 1964 have not been included. Re-exports of butter to the United States of stocks purchased in the Netherlands in 1966, have not been included. This butter was further processed in Canada with the addition of sugar and subsequently exported to the United States as a different product in another export class.

(4) Exports of marine oils listed as inedible oils, include sun-rotted cod liver oil, fish and marine animal oil, fish liver and visceral oils. A part of these oils can be assumed to be of feed grade, and even some edible oil may have been included.

WORLD FATS AND OILS REVIEW

Survey of World Oils and Fats Market
by
C. A. C. de Boinville
President
International Association of Seed Crushers

Depending on the source, estimates concerning the expected surplus of fats and oils on the world market in 1967/68 diverge widely. All observers, however, agree that the expected surplus will depress prices — provided that present consumption trends continue.

Tables 4, 5 and 6 reflect authoritative estimates of the world production of fats and oils as well as of the exports of fats, oils and protein meals.

The following are comments on the world situation presented by Mr. C. A. C. de Boinville at the June 1967 Congress of the International Association of Seed Crushers in Brussels, Belgium:

At last year's Congress I referred to the shortage of oils and fats in Europe in 1965 and the resultant high level of prices, the highest since the Korean War boom in 1950/51. I predicted that the supply situation, which already showed signs of easing, would ease further over the succeeding twelve months. This, as you all know, has proved true and this year has seen a sizeable surplus of supplies in contrast to the shortages which were experienced a year or two ago. The main feature, therefore, of the world market since June last year, has been the sharp drop in prices. Indeed, for those of you who like statistics, the overall level of oils and fats prices has in recent months been at its lowest point, with the exception of 1962/63, since the end of the Second World War. In the first half of this year the price has been 14% below last year.

Why has this surplus come about?

Two developments together have accounted for an additional half million tons of products available for export this year. i) In 1966 Russia harvested an exceptionally large sunflower-seed crop — a crop of 6.1 million tons. I think they would agree that a more normal level is around 5.2 million tons. This crop, together with better crops generally in Eastern Europe, has added about 350,000 tons of sunflower oil to the quantity available for export. There has been a swing over the last three years in the U.S.S.R./Eastern European Zone from being net importers of oils and fats to being significant net exporters. Ten years ago only 17,000 tons of sunflower oil equivalent were exported from this zone compared to a probable 400,000 tons this year. This tremendous change around will bring obvious repercussions on the world market. ii) The second development has been the dramatic rise in Norwegian fish oil production. For the calendar year 1966, their production was three times greater than in 1964 and in 1967 a further increase has occurred. Across the world from Norway, their main rival, Peru, has exported more fish oil in the first quarter of 1967 than it shipped during the whole of 1966. Naturally the result has been a depression of fish oil prices to low levels, and now, too, there appear to be problems of disposal of the meal.

These two developments have hit the U.S.A. hard. There has been a decline in U.S. oil prices and in "free dollar" oil exports which have become less competitive on world markets. Total U.S. oil production will decline this season largely as a result of a drop in production of 300,000 tons of cotton oil.

Demand for PL480 oil, especially from India, Pakistan and Yugoslavia, has been heavier than last year. In fact, with the decline in commercial demand, PL480 shipments are likely to account for nearly 75% of U.S. exports this year.

Whale oil, once again, has not played a significant part in world oils and fats markets. However, there may be an interesting development arising from the decline of the whale population. It is reported that one of the Russian whaling fleets has been equipped with special gear to fish for krill – the shrimp-like crustaceans on which the whales feed. It is said that the Russians are turning the krill mainly into fishpaste on a pilot scale, but that there are vast possibilities for krill oil and krill meal. Fishery experts have long known about this potential raw material but considered that it would be 20 years or more before it could be tapped. Now the Russians are showing the world that this source of fresh material is not so remote. It is an exciting prospect for a world that desperately will require all that man's ingenuity can provide to keep its 6,000 million people alive by the end of this century.

What of the immediate future? Early indications point towards an ample supply of oils and fats in the coming year. Let me touch briefly on news from a few sources.

In the U.S. there is likely to be an end of season stock approaching 100 million bushels of soybeans. And it may well be that that magical 1,000 million bushels mark may be reached in this year's harvest. Although there has been no increase in the support price, farmers have announced their intention to increase acreages by 9% and yields per acre, which average 25 bushels at present, are bound to go up and up. When I was in Illinois last October, I heard stories of farms where 75 to 100 bushels of beans were being obtained per acre. So much will depend as usual on the weather – given favourable weather we can expect the 1,000 million bushel break-through!

In Argentina the sunflowerseed crop harvested recently has been estimated at close on a million tons, or 50% above the last five-year average.

In Brazil they expect oilseed crops to increase between 25% and 50% over last year.

In the Philippines copra production, which has fallen so far this year, is expected to resume an upward trend, as a result of new trees coming into production and a better rainfall.

In Malaya – now the largest single exporter of palm oil – it is expected that new plantings now coming into production will enable them to increase exports.

In Nigeria they are expecting to achieve for the first time the milestone of a million-ton groundnut crop. The problem here will be transportation.

In Peru it is impossible to forecast, as this year's greatly increased production of fish oil was due to fatter anchovies being caught.

In Canada in 1966 rapeseed exports at 360,000 tons were over half the world total and have made this country in ten years the world's leading exporter of rapeseed. This year, given good conditions, an even bigger crop is expected.

In Europe they expect record rapeseed crops and, if weather permits, presumably we can expect further crops of sunflowerseed from Eastern Europe and the U.S.S.R.

We cannot leave oils and fats supplies without reference to their byproducts – oilcakes and meals. From 1962 to 1966 world supplies of oilcake and meal (including fish meal) rose by nearly 30%, but such was the bouyancy of demand for proteins, that prices ended that period some 30% higher than in 1962.

This year there has been a decline in price due mainly to two factors: one I have already mentioned – a surplus of Norwegian and Peruvian fishmeal; the second, a mild European winter and lower livestock prices in the United States and Western Europe. Soymeal prices were affected by surplus supplies of other meals and have dropped from $86 last December to around $70 currently.

I am absolutely convinced, however, that our problem will be, in the long-term, a world wide shortage of proteins resulting in a higher level of prices eventually. There is bound to be an impressive increase in livestock production and in the development of intensive feeding in the coming years.

TABLE 4

Estimated World Production of Fats and Oils

(Oil or fat equivalent)
(thousands of tons)

Commodity	Average 1955-59	1960	1961	1962	1963	1964	1965	1966(2)	Forecast 1967
Edible Vegetable Oils(3)									
Cottonseed	2,081	2,280	2,305	2,430	2,490	2,610	2,715	2,695	2,550
Peanut	2,605	2,560	2,725	2,855	2,985	3,100	3,285	3,115	3,155
Soybean	3,024	3,815	3,660	4,020	4,195	4,270	4,500	4,960	5,380
Sunflowerseed	1,422	1,575	1,990	2,190	2,545	2,285	2,910	2,795	3,100
Rapeseed	1,209	1,280	1,320	1,300	1,190	1,230	1,665	1,490	1,585
Sesameseed	590	590	530	585	590	600	605	565	615
Sunflowerseed	89	125	140	155	220	235	205	220	290
Olive Oil	1,091(4)	1,300	1,480	1,475	1,020	1,875	1,080	1,330	1,420
Corn Oil	170	195	210	225	240	255	270	265	275
Totals	12,281	13,720	14,360	15,235	15,475	16,460	17,235	17,435	18,370
Palm Oils (5)									
Coconut	2,286	2,240	2,395	2,325	2,420	2,435	2,360	2,475	2,400
Palm Kernel	464	455	440	405	410	420	405	415	425
Palm	1,394	1,455	1,410	1,365	1,390	1,400	1,405	1,410	1,420
Babassu Kernel(6)	51	64	57	66	50	66	70	85	85
Totals	4,195	4,214	4,302	4,161	4,270	4,321	4,240	4,385	4,330
Industrial Oils(3)									
Linseed	1,138	1,075	1,110	1,080	1,150	1,190	1,150	1,210	1,060
Castorbean	235	295	265	295	320	390	320	295	330
Oiticica	9	22	18	28	6	19	22	24	25
Tung	128	136	120	108	103	123	130	109	147
Totals	1,510	1,528	1,513	1,511	1,579	1,722	1,622	1,638	1,562
Animal Fats									
Butter (fat content)	4,014	4,250	4,295	4,375	4,375	4,455	4,615	4,660	4,780
Lard(7)	3,727	4,000	4,045	4,085	4,065	3,845	3,940	4,000	4,020
Tallow and Grease	3,243	3,440	3,640	3,745	4,085	4,405	4,285	4,285	4,350
Totals	10,984	11,690	11,980	12,205	12,525	12,705	12,840	12,945	13,150
Marine Oils									
Whale	427	418	428	390	295	249	218	175	155
Sperm Whale	119	122	120	130	149	165	170	170	175
Fish (including liver)	427	512	662	734	684	836	875	935	940
Totals	973	1,052	1,210	1,254	1,128	1,250	1,263	1,280	1,270
Estimated World Totals	29,943	32,204	33,365	34,366	34,977	36,458	37,200	37,683	38,682

(1) Years indicated are those in which the predominant share of the given oil or fat was produced from its related raw material.

(2) Preliminary. (3) Estimates of U.S. oil production include actual oil produced plus the oil equivalent of exported oilseeds; estimates for other countries are based upon the production of various oilseeds times the estimated normal proportions crushed for oil. (4) 1955-58 average. (5) Estimated on the basis of exports and information available on consumption in the various producing areas. (6) Figures for 1960-67 represent mill production only. (7) Rendered lard only in most countries.

Source: USDA, January 1967.

TABLE 5

World Net Exports of Oilseeds, Oils and Fats, Primarily for Food

(thousands of short tons)

Edible Vegetable	1963	1964	1965	1966
Soybeans	5,769	6,922	7,592	8,192
Soybean oil	561	650	615	440
Total, as oil	1,600	1,895	1,981	1,914
Cottonseed	539	386	462	407
Cottonseed oil	218	358	342	172
Total, as oil	304	421	417	237
Peanuts	1,613	1,586	1,437	1,586
Peanut oil	364	385	410	458
Total, as oil	1,073	1,082	1,043	1,156
Rapeseed	321	335	594	668
Rapeseed oil	26	25	71	114
Total, as oil	151	157	302	374
Sunflowerseed	212	338	279	335
Sunflower oil	357	250	331	464
Total, as oil	429	380	438	592
Sesame	181	191	158	171
Sesame, as oil	85	89	74	80
Olive oil	164	203	119	184
Totals: seed	8,634	9,757	10,522	11,358
veg. oils	1,691	1,871	1,886	1,832
Combined, as oil	3,806	4,227	4,373	4,537

TABLE 5 (Conc.)

World Net Exports of Oilseeds, Oils and Fats, Primarily for Food

(thousands of short tons)

Palm				
Copra	1,624	1,547	1,547	1,583
Coconut oil	421	468	435	512
Total, as oil	1,460	1,452	1,427	1,525
Palm kernels	756	732	711	681
Palm kernel oil	46	56	62	94
Total, as oil	401	400	396	413
Palm oil	574	614	589	613
Totals: seed	2,380	2,279	2,258	2,264
veg. oils	1,041	1,132	1,086	1,219
Combined, as oil	2,435	2,466	2,411	2,551
Animal fats, edible				
Butter (82%)	579	577	540	559
Lard (1)	443	510	321	299
Total	1,022	1,090	861	857
Marine oils, edible				
Whale oil (production)	294	249	218	138
Fish oils	452	429	496	561
Total	746	678	714	699
World Totals				
Oilseeds (actual weight)	11,015	12,036	12,780	13,622
Veg. oils	2,732	3,003	2,972	3,050
Animal and marine	1,768	1,768	1,575	1,556
Grand total (oil basis)	8,009	8,461	8,359	8,644

(1) Includes negligible amounts of edible tallow.

Source: Courtesy of Oil World, Hamburg.

TABLE 6

World Net Exports of Oilseed Cake and Meal, and Fish Meal

(thousands of short tons)

	1965				1966			
	Seed (1)	Meal	Total	Protein (2)	Seed (1)	Meal	Total	Protein (2)
Soybean	5,998	2,321	8,319	3,827	6,472	2,690	9,162	4,214
Cottonseed	319	1,289	1,608	659	281	1,299	1,580	648
Peanut	805	1,495	2,300	1,196	888	1,600	2,488	1,294
Rapeseed	338	80	419	151	380	122	503	181
Sunflowerseed	166	384	540	200	201	600	800	296
Sesame	82	46	128	51	89	43	132	53
Copra	541	412	953	209	554	413	968	213
Palm kernel	369	110	479	86	354	153	507	92
Linseed	399	790	1,189	428	526	573	1,099	396
Unspecified(3)	209(4)	343	552	180	198(4)	365	563	182
Total	9,226	7,261	16,487	6,986	9,943	7,858	17,802	7,567
Fish meal	–	2,387	2,387	1,552	–	2,646	2,646	1,720
Grand Total	9,226	9,648	18,874	8,537	9,943	10,504	20,448	9,288

(1) Oilcake equivalents of oilseed net exports.

(2) Average raw protein content of oilcake expeller meal.

(3) Except castor bean.

(4) Mainly safflowerseed.

Source: Courtesy of Oil World, Hamburg.

TABLE 7

Canadian Crushings of Vegetable Oilseeds and Production of Meal and Oil

(millions of pounds)

	1962	1963	1964	1965	1966	August — April 1965/66	1966/67
Crushings							
Flaxseed	132	135	171	159	138	113	108
Soybeans	1,046	1,089	1,158	1,173	1,203	929	861
Rapeseed	75	80	87	132	214	139	191
Sunflowerseed	3	7	21	20	12	9.9	10.4
Total	1,256	1,311	1,437	1,484	1,567	1,171	1,170
Oil Production							
Flaxseed	45	47	59	55	49	39	38
Soybeans	181	187	200	199	198	154	144
Rapeseed	28	31	34	52	84	54	76
Sunflowerseed	0.9	2.4	6.7	6,7	4.4	3.4	4.2
Total	225	267	300	313	335	250	262
Meal Production							
Flaxseed	81.4	82.5	106.9	97.5	85.0	68.8	66.2
Soybeans	815	855	917	932	950	737.3	684.5
Rapeseed	45.4	47.2	51.2	76.5	122.8	80.0	109.9
Sunflowerseed	1.0	2.4	7.1	7.3	4.6	3.8	4.0
Total	943	987	1,082	1,113	1,162	889.9	864.6

Source: DBS Cat. #22-001

Comments to Table 7

The total volume of oilseed crushings increased by 5.5% from 1,484 million pounds in 1965 to 1,567 million pounds in 1966. Since the total Canadian crushing capacity grew to a similar extent during this period, its utilization remained at the same level. Plant expansions carried out or planned in 1967 may lower the rate of utilization.

Flaxseed crushing continued its decline, dropping by 13% during this period.

Soybean crushing increased by less than 3% in 1966. However, a comparison of the first nine months of the crop year 1966/67 with 1965/66 shows a decrease of 68 million pounds (1.1 million bushels). A lowering of the export demand for the meal and competition from other vegetable oils are the principal causes.

Rapeseed crushing crew by 62% from 132 million pounds in 1965 to 214 million pounds in 1966. While the rate of growth has slowed down during the crop year 1966/67, increased rapeseed crushing is expected both in Western and Eastern Canada as a result of plant expansions, favorable economic circumstances and improved acceptability of the products. It will be interesting to observe whether the next two years will support and justify present indications for a further substantial increase in rapeseed crushing in Canada.

Based on the calender year, sunflowerseed crushing dropped significantly during 1966 compared with 1965. On a crop year basis it remained at the same level, which reflects more accurately the maintenance of the level of supply.

While linseed oil production declined again in 1966, Canadian output of crude edible vegetable oils rose by 11% from 258 million pounds in 1965 to 286 million pounds in 1966. A comparison with the 406 million pounds of refined vegetable oils (Table 63) consumed in the production of various edible oil products indicates the extent to which the demand can now be met by domestic supply.

Soybean oil production in 1966 remained at the same level as in 1965, however, a comparison of similar 9-month periods of the crop year 1965/66 and 1966/67 shows a distinct reduction in soybean oil output.

Rapeseed oil production rose strikingly from 52 million pounds in 1965 to 84 million pounds in 1966, and is expected to reach 100 million pounds during the crop year 1966/67, accounting for at least 34% of the output of edible oils by Canadian mills.

Sunflower oil production remained at a low level. Since sunflower seed acreage is not likely to expand greatly in 1967, the relative importance of domestically produced sunflower oil will not change within the next year.

Oilseed meal production grew by 4% from 1,113 million pounds in 1965 to 1,162 million pounds in 1966. While soybean meal accounts for 82% of oilseed meal production, the share held by rapeseed meal rose to 10.5% in 1966 from 6.9% in 1965, and it continues to grow.

The following compilation indicates the trends in oil and meal yields during the past three years, as based on the data in Table 7.

Oil and Meal Yields

(percentage)

	1964		1965		1966	
	Meal	Oil	Meal	Oil	Meal	Oil
Flaxseed	62.6	35.1	61.3	34.5	61.6	35.2
Soybeans	79.2	17.3	79.4	16.9	79.0	16.5
Rapeseed	58.9	39.2	58.0	39.3	57.4	39.4
Sunflowerseed	33.8	32.0	36.5	33.5	38.3	36.4

Soybean oil yields have been low, possibly due to fluctuation in bean quality. Improved sunflower meal and oil yields are mainly the result of the introduction of new seed varieties with lower hull content.

TABLE 8

Preliminary Estimate of High Protein Feed Supplies Available in Canada in 1966

(thousands of tons)

Item	1963	1964	1965	1966 (preliminary)
Linseed meal	29	38	26	27
Soybean meal	443	452	460	479
Rapeseed meal	23	25	36	60
Other oilseed meals, gluten feed(1)	56	64	64	61
Brewers & distillers dried grains & malt sprouts	109	112	112	113
Total Vegetable Protein	660	691	697(2)	739
Fish meal	38	23	43	40
Packinghouse byproducts	137	167	195(2)	193
Skim milk, buttermilk & whey powders	19	19	19(2)	19
Total Animal Protein	194	208	256	252
Total Protein Supplies	854	899	953	991

(1) Other oilseed meals include sunflowerseed, cottonseed, and n.e.s.

(2) Preliminary and partly estimated.

Source: DBS Catalogue No. 22–001

SOYBEANS, SOYBEAN OIL, SOYBEAN MEAL

The Canadian Soybean Outlook

Soybean imports in 1966 amounted to 475,219 tons, (15.8 million bushels) remaining at the same level as in 1965. Soybean exports continued growing in 1966, amounting to 98,272 tons (3.3 million bushels) with 96% destined for the British market. Assuming an average of 8.3 million bushels for the crops harvasted in 1965 and 1966, domestic beans could have accounted for not more than 4.5 million bushels of the total crushings of slightly more than 20 million bushels in 1966.

The estimated acreage in 1967 may be slightly reduced to 265,000 acres from 268,000 acres in 1966. If previous yields are maintained, the crop will again be somewhat above eight million bushels.

Following a record high average price of $3.62 per bushel in July, 1966, soybean prices have dropped in relation to corresponding United States prices, and have ranged around the $3.00 level during the half half of 1967. Oil prices dropped sharply in September, 1966, by about 3 ¢ to 14 ¢ per pound and remained steady at about 13 ¢ for the first five months of 1967. Large United States soybean oil supplies and the indication of a one billion bushel harvest combined with the import of European rapeseed and sunflower oils at very competitive prices will reduce the soybean oil price to about 12 ¢ per pound by early July, 1967.

In June, 1967, Mr. J. C. Henderson, vice-president of Victory Soya Mills, Toronto, made the following comments on the Canadian soybean industry in an address to the annual congress of the International Association of Seed Crushers in Brussels, Belgium:

"The possibility for expansion of soybean growing has until now been limited. It is the opinion of leading agronomists that with the advent of weed control through the usage of chemical sprays, soybeans can be planted solid like grain, rather than in rows. With new bean varieties requiring a shorter growing season, a great deal larger area can be planted in soybeans in the near future, and could easily double or triple our present annual production of some 220,000 metric tons. At present Canada imports a considerable quantity of beans from the U.S.A. Crushing is primarily concentrated in Ontario, partially because this is where the crop is grown; also, a major portion of the oil refining capacity, along with almost two-thirds of the population of Canada, is concentrated in Ontario and to the east through Quebec. Other reasons are the crushers' ability to move United States beans into their plants by water transport, as well as the poultry and livestock industry being nowhere larger than in these two provinces. However, while a large market exists for protein meals in Western Canada, the cost of transporting meals from Ontario crushing plants to these areas far exceeds the costs of moving meals from the United States mid-west crushing locations. As there is no duty on meal entering Canada; the Ontario crusher is unable to compete in this Western market. Canadian crushers, therefore, turn to the export market with their surplus meal and the Western feed compounders import their requirements, which in tonnage, curiously just about balance.

"With close to 550,000 metric tons of soybeans being crushed annually, Canada imports large quantities, all of which currently come from the U.S.A. This puts the Canadian crusher on a United States basis for his cost and obviously on a similar basis for pricing the end products. However, the Canadian

crusher does not enjoy the same duty protection afforded the United States crusher, which is presently 45% on oil and $6 a short ton on meal, so with these lower world prices on oils and meals, we in the soybean crushing industry in Canada are far from happy."

Canadian imports and exports of both soybean oil and meal in 1966 underwent declines ranging from 14% to 19% compared with 1965. While virtually all soybean oil and meal imports came from the United States, the exports nearly all went to Great Britain, as in previous years. Some of the oil exports are said to have been necessitated by competitive vegetable oil imports.

The total Canadian supply of soybean oil dropped by 6.5 million pounds to 228.5 million pounds in 1966 from 235 million pounds in 1965. The apparent domestic disappearance dropped by only 2.1 million pounds to 191.9 million pounds during the same period. Since complete usage data for soybean oil for previous years are not available, it is not possible to draw quantitative conclusions on consumption trends in various products.

Soybean meal supply decreased by 31,900 tons in 1966 to 703,000 tons as a result of smaller imports. However, lower exports increased the apparent domestic disappearance from 466,700 tons in 1965 to 486,100 tons in 1966.

The trend established in soybean meal imports, Table 15, deserves careful analysis. While total imports dropped by about 34,000 tons, from 249,000 tons in 1965 to 215,000 tons in 1966, largely as a a result of a 28% decrease in Ontario and Quebec by 54,000 tons to 141,000 tons, imports into Western Canada grew by more than 19,000 tons to 72,000 tons during the same period. Western Canada's soybean meal imports thus grew from 21% of the total in 1965 to 33% in 1966.

It can also be assumed that at least 50%, of the 61,000 tons of rapeseed meal produced in Western Canada in 1966 was consumed locally.

The developments in the livestock industry may help to explain the increased consumption of oilseed protein in Western Canada:

a) Cattle: The 1966 total as a percentage of the 1965 total on farms actually declined by four per cent. A shift to feedlot operations may, however, have led to increased demand for meals.

b) Hogs: The population on December 1, 1966 was 17% above that of December 1, 1965, and more meal would therefore have been consumed.

c) Poultry: The total poultry population increased only by a small percentage in Western Canada during 1966.

TABLE 9

Canadian Supply and Disposition of Soybean Oil and Meal

(millions of pounds)

	1962	1963	1964	1965	1966
Soybean Oil					
Stocks, starting	12.2	5.5	7.3	6.5	6.3
Production	181.3	186.8	200.3	198.6	197.9
Imports	19.3	29.6	34.5	29.9	24.3
Supply	212.8	221.9	242.1	235.0	228.5
Exports	50.6	45.4	25.0	34.7	29.2
Stocks, Dec. 31	5.5	7.3	6.5	6.3	7.4
Apparent Domestic Disappearance	156.7	169.2	210.6	194.0	191.9

(thousands of tons)

	1962	1963	1964	1965	1966
Soybean Meal					
Stocks, starting	6.6	11.4	10.1	19.3	12.4
Production	407.7	427.4	458.5	466.6	475.8
Imports	275.6	256.8	222.9	249.0	214.8
Supply	689.9	695.6	691.5	734.9	703.0
Exports	218.1	241.3	229.3	255.8	211.8
Stocks, Dec. 31	11.4	10.1	19.3	12.4	5.1
Apparent Domestic Disappearance	460.4	444.2	442.9	466.7	486.1

Source: Based on DBS data

TABLE 10

Canadian Soybean Prices(1)

(crop year)
(cents and eighths per bushel)

	1962–63	1963–64	1964–65	1965–66	1966–67
August	242/5	275	276	283/6	339/2
September	248/2	281/6	298/2	272/7	325/3
October	252/1	207/1	303/6	273/4	310/4
November	255/2	295/3	312/7	264/1	305/5
December	256/4	292/1	318/3	283/3	303
January	269/1	288	324/1	298/5	296/6
February	276/1	276/4	328/6	302/7	295/1
March	275/1	275/3	322/1	297/4	298/5
April	273	272	320/1	309/5	298/4
May	276/6	267/3	302/5	321/7	
June	283/3	265/6	312/2	346/6	
July	281/7	266/7	304/3	362/1	
Yearly average	265/7	279/3	310/4	301/2	

(1) Buying prices, carlots, f.o.b. Chatham.
Source: DBS No. 22–001.

TABLE 11

Canadian Imports of Soybeans

(tons)

Country of Origin	1962	1963	1964	1965	1966
Hong Kong	7	4	5	7	6
United States	418,000	425,738	548,326	476,255	475,213
Total	418,007	425,742	548,331	476,262	475,219
Total Value (thousands of $)	37,340	41,094	52,899	46,327	52,438

Source: DBS, Trade of Canada

TABLE 12

Canadian Export of Soybeans

(tons)

Destination	1962	1963	1964	1965	1966
United Kingdom	78,674	47,122	56,547	82,521	94,006
Denmark	–	–	–	–	22
West Germany	3,296	1,461	1,120	4,535	2,285
Sweden	–	–	1	33	44
Switzerland	–	88	33	45	–
Rep. of South Africa	–	–	–	198	279
United States	–	–	–	1	13
Netherlands	–	–	–	–	1,623
Australia	–	56	–	–	–
Total (tons)	81,970	48,727	57,702	91,032	98,272
Total (millions of bushels)	2.7	1.6	1.9	3.1	3.3
Total Value (thousands of $)	7,704	4,979	5,767	9,954	10,906

Source: DBS, Trade of Canada

TABLE 13

Canadian Imports of Soybean Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
Germany, West	–	–	–	–	101
United States	19,302	29,613	34,505	29,946	24,241
Total	19,302	29,613	34,505	29,946	24,342
Total Value (thousands of $)	2,251	3,435	3,822	4,104	3,398

Source: DBS, Trade of Canada

TABLE 14

Canadian Exports of Soybean Oil

(thousands of pounds)

Destination	1962	1963	1964	1965	1966
United Kingdom	44,961	45,372	25,016	33,728	29,191
Netherlands	–	–	–	1,447	–
Peru	–	1	1	2	3
United States	60	–	–	–	–
Spain	5,605	–	–	–	–
Total	50,625	45,373	25,017	34,727	29,194
Total Value (thousands of $)	5,260	4,969	3,047	4,704	3,728

Source: DBS, Trade of Canada

TABLE 15

Imports of Soybean Meal by Province

(calendar year)

	1963		1964		1965		1966	
	Tons	Thousands of $	Tons	Thousands of $	Tons	Thousands of $	Tons	Thousands of $
Nfld.	–	–	95	9	30	2	70	8
N.S.	2,380	210	160	14	175	14	1,124	109
P.E.I.	–	–	150	15	215	19	141	14
N.B.	860	69	935	72	870	73	685	69
Que.	83,080	6,605	58,220	4,520	80,185	6,568	57,730	5,540
Ont.	118,670	9,376	112,910	8,711	114,800	9,515	83,049	7,992
Man.	27,545	2,290	29,530	2,388	30,680	2,584	35,693	3,326
Sask.	490	42	375	32	640	58	4,000	368
Alta.	4,475	379	5,500	463	6,145	533	9,911	953
B.C.	19,325	1,640	15,040	1,220	15,250	1,350	22,432	2,122
Total	256,825	20,611	222,915	17,444	248,990	20,716	214,835	20,500

Source: DBS.

TABLE 16

Canadian Exports of Soybean Oil Cake & Meal

(tons)

Destination	1962	1963	1964	1965	1966
United Kingdom	212,500	241,145	216,688	247,747	210,714
Australia	–	–	–	6,391	442
Barbados	60	60	90	60	240
Leew.-Wind. Is.	–	–	–	2	16
Trinidad – Tobago	–	–	15	106	70
Cuba	5,275	–	12,493	1,255	328
United States	57	34	43	196	–
British Guiana	–	–	1	–	–
Venezuela	–	100	–	–	–
Ireland	168	–	–	–	–
New Zealand	4	–	–	–	–
Bermuda	2	–	–	–	–
Total	218,067	241,340	229,329	255,756	211,810
Total value (thousand $)	18,024	21,923	21,075	24,270	20,267

Source: DBS

TABLE 17

Canadian Imports of Miscellaneous Oilseed Cake & Meals

(tons)

	1962	1963	1964	1965	1966
Cottonseed Meal	401	939	2,917	4,420	1,873
Oilseed Cake & Meal, N.E.S.	246	165	50	73	140
Total	647	1,104	2,967	4,493	2,013
Total value (thousand $)	56	90	235	358	176

Source: DBS, Trade of Canada

TABLE 18

Canadian Exports of Oilseed Cakes and Meals

(short tons)

Destination	1962	1963	1964	1965	1966
United Kingdom	–	–	1,114	3,539	2,734
Japan	530	1,102	–	–	–
Guiana	1	–	2	13	–
Trinidad	33	–	93	159	–
United States	–	1	20	13	26
Leew. Wind. Is.	–	–	1	37	–
Denmark	–	–	–	33	–
Barbados	–	–	–	5	–
Total	564	1,103	1,230	3,799	2,760
Total Value (thousands of $)	24	83	74	318	137

Source: DBS, Trade of Canada.

RAPESEED, RAPESEED OIL, RAPESEED MEAL

The Canadian Rapeseed Situation of 1966

Prices and Trade

The record 1966 crop of 25.5 million bushels appeared at a time when the market for rapeseed looked very promising. Prices, (see Table 19) declined slightly from the high of about $2.90 per bushel in August 1966 to $2.66 in October. In the course of the winter 1966/67, rapeseed prices remained at a high level and started to drop only in the summer of 1967, largely in response to the increased pressure from the supply of American soybeans and Soviet sunflowerseed and oil. In late summer 1967 rapeseed prices declined to $2.50 per bushel.

Rapeseed exports continued their growth (Table 20) by a 31% increase from 266,000 tons in 1965 to 349,000 tons in 1966. Japan's share grew to 194,000 tons, or 56% of the total, with the bulk of the remainder being taken by Italy, The Netherlands and West Germany.

According to West German statistics, that country imported 53,000 tons of rapeseed from Canada in 1966, and The Netherlands reported only 8,700 tons of total rapeseed imports. It must be assumed that more than 30,000 tons of Canadian rapeseed reported as exports to The Netherlands were actually transshipped to Germany. A somewhat similar situation existed in 1965 when German sources reported the importation of 37,200 tons of rapeseed from Canada, compared with 22,645 tons according to Canadian export data.

Italy increased her imports of Canadian rapeseed from 48,000 tons in 1965 to 60,000 tons in 1966. However, Canada's share of Italy's total rapeseed imports dropped, since these imports rose from 145,000 tons in 1965 to 230,000 tons in 1966. Since the 1966/67 olive oil production is expected to decline, Italy will have to rely on the importation of substitutes, Canada will face strong competition from rapeseed originating in E.E.C. countries and from East European sunflowerseed. Sunflower imports increased from 69,000 tons in 1965 to 135,000 tons in 1966.

United Kingdom imports of rapeseed rose from 8,800 tons in 1963 to 47,000 in 1966. Canada's exports of rapeseed to the United Kingdom declined from 9,000 tons in 1965 to 4,000 tons in 1966 because of strong competition from European exporters.

Canadian exports of rapeseed oil have dwindled to a point where they have become insignificant, and D.B.S. no longer lists them separately.

Preliminary Review of 1966/67 Crop Year: Rapeseed and Flaxseed

According to the Board of Grain Commissioners, Canadian farmers marketed 20.4 million bushels of rapeseed during the crop year 1966/67 compared with 18.8 million bushels during 1965/66. Export clearances rose from 13.6 million bushels (340,000 tons) in 1965/66 to 13.8 million bushels (345,000 tons) in 1966/67. Japan's share rose from 169,000 tons to 210,000 tons during the same period. Domestic crushing is reported to have increased from 3.9 million bushels in 1965/66 to 5. million bushels in 1966/67. This volume would correspond to a production of approximately 100 million pounds of rapeseed oil. The first estimate of the 1967 rapeseed harvest indicated a 25.6 million bushel crop grown on an acreage which had increased by 13% compared with the previous year.

Preliminary Estimates of Rapeseed and Flaxseed Crop Acreage

	1966		1967	
	Rapeseed	Flaxseed	Rapeseed	Flaxseed
	(thousand acres)			
Manitoba	170	1,107	176	718
Saskatchewan	731	429	675	193
Alberta	624	347	875	171
Total Prairie Provinces	1,525	1,883	1,726	1,082

This would indicate a rapeseed yield decrease to 14.8 bushels per acre from 18.4 bushels the previous season.

The reduction in flaxseed acreage by 43 % from 1,883,000 acres to 1,082,000 acres has been most dramatic and indicates an adjustment to the smaller markets. D.B.S. estimates the total flaxseed harvest will reach only 10.3 million bushels in 1967 compared with 23.0 million bushels in 1966. The relatively low crop estimates show the effects of drought throughout most of Saskatchewan, southwestern Manitoba, southeastern Alberta and the Peace River District. Particularly hard hit are crops grown on stubble.

Summerfallow and Stubble

According to D.B.S. Field Crop reports, the proportion of all grain crops sown on summerfallowed land in the Prairie Provinces in 1966 declined compared with the previous year, except for rapeseed, which remained unchanged from 1965.

	Rapeseed			Flaxseed		
	Summerfallow	Stubble	Total	Summerfallow	Stubble	Total
Seeded Area Thousand Acres						
1960-64 Average	435	187	622	968	926	1,894
1965	803	632	1,435	758	1,507	2,265
1966	784	604	1,388	587	1,442	2,029
Distribution (%)						
1960-64 Average	70	30	100	51	49	100
1965	56	44	100	33	67	100
1966	56	44	100	29	71	100
Average Yield Per Seed Acre (bushels)						
1960-64 Average	17.9	18.9	22.0	10.6	8.5	9.6
1965	11.7	11.8	13.6	14.6	11.5	12.5
1966	16.0	15.7	18.4	16.0	9.4	11.3
Production Million bushels						
1960-64 Average	7.78	2.18	9.96	10.3	7.9	18.2
1965	15.17	7.43	22.60	11.1	17.3	28.4
1966	17.26	8.24	25.50	9.4	13.6	23.0

FOUNDATION OF THE RAPESEED ASSOCIATION OF CANADA

Winnipeg, March 14, 1967

More than 180 delegates from Quebec to British Columbia assembled in Winnipeg, Manitoba, on March 14-15, 1967 to discuss the establishment of an organization representing all the far-flung groups responsible for the development of rapeseed as Canada's major oilseed crop.

The proceedings were chaired most capably by Mr. A.M. Runciman, president of the United Grain Growers. He succeeded in conveying to the producers, to the traders, to the feed manufacturers, to the processors and to the edible oil refiners that they share a common problem: an unrealized growth potential of their industry which can be achieved if the following objectives are attained:

1) Improve the quality of the oil and yield of the oil.
2) Improve the quality of the meal.
3) Increase yield potential and other agronomic factors so producers can realize larger yields.
4) Increase sales of seed, oil and meal, both domestically and abroad.

Mr. James McAnsh and Mr. W.G. Malahar had, during many months of preparation, laid the basis for a successful conference.

The Honorable H. Enns, Manitoba Minister of Agriculture, welcomed the delegates and stressed the need for agricultural diversification.

Mr. Glenn H. Pogeler, President of The Soybean Council of America, delivered the keynote address entitled Aims, Objectives and Experiences of The Soybean Council of America.

Dr. B. Weinberg of the Department of Industry, Ottawa, reported on the Federal Department of Industry's efforts to promote the growth and efficiency of the domestic rapeseed processing industry, which are largely directed towards the greater acceptance of rapeseed oil and meal by their respective markets.

Mr. G.W. Neumann, Nipawin, Saskatchewan, spoke for the Western crushers and Mr. M.J. McDonald, Montreal, for the Eastern crushers. Mr. J.G. Cummings, Winnipeg, discussed the growing importance of rapeseed oil in the manufacture of margarine, shortening, salad and cooking oils, and outlined the areas where the new Association could assist in consolidating the market for rapeseed oil.

Mr. S.C. Roberts, president of the Manitoba Feed Manufacturers' Association, represented the feed manufacturers. He said that once the oversupply of vegetable oils is cleared up, the future of rapeseed in Canada will depend on the use of rapeseed meal as a feed supplement. Whether or not a feed manufacturer will include rapeseed meal into a formulation will depend on the following considerations and in the following order:

Quality

Cost

Availability

Mr. Roberts stated, "Rapeseed meal has a bright future as a valuable feed supplement and may very well in the near future totally replace soymeal as our vegetable protein for animal feeds. But in order for it to do so, we must honestly face the problems and the doubts present," He concluded that

the Rapeseed Association could surely put order into the growing, processing and marketing of rapeseed and rapeseed products. Equally important, it could co-ordinate the research for maximum benefits to all.

Mr. C.O. Swartz, Winnipeg, voiced the views of the exporters and shippers and had no difficulty in convincing his listeners of the fascinating, but also very complicated international market for rapeseed and its products. "Canada requires capital, knowledge and skill to develop our great potential" summarized the essence of Mr. Swartz's remarks.

Mr. R.A.V. Lester of the Vancouver Grain Exchange, as representative for the terminal and line elevators, stressed the problems involved in the efficient handling and moving of rapeseed in order that top-quality seed may reach our overseas customers.

Mr. J.E. McCannel, President of the Winnipeg Grain Exchange, discussed the role of the future market in establishing prices for rapeseed, and stated that it has brought considerable order and stability to the marketing of a rapidly increasing volume of Canadian rapeseed.

Mr. H.T. Armstrong of the Department of Trade and Commerce, Ottawa, discussed the opportunities of the international market for rapeseed and the many services offered by his Department for the expansion into new as well as established areas.

Mr. J.R. Blakely of Whittome, Saskatchewan, told the gathering of his experiences with rapeseed within the Western crop rotation system. He expects the Association to assist the farmer in tackling his weed problem. The Association should support research designed to develop improved rapeseed varieties. Mr. Blakely stressed that the Association should be representative of all segments of the industry.

Mr. O.G. Bratvold, Edmonton, Alberta, represented the Departments of Agriculture of the three Prairie provinces. He said that he represented fairly definite views on what the proposed Association should do:

1) It should primarily promote market development

2) It should advise on research to assure co-ordination with market needs

3) It should provide broad guidelines for major production problems

The Rapeseed Association is guided by a Board of Directors. The first Board is constituted as follows:

COMPOSITION OF THE BOARD

RAPESEED GROWERS

1. Manitoba .... Mr. D.S. Marshall, Ninga
2. Saskatchewan .... (to be nominated)
3. Alberta.. Mr. M. Nikolachuk, Woking

GROWERS' ORGANIZATIONS

1. Alberta Wheat Pool .... Mr. G.L. Harrold, Calgary
2. Saskatchewan Wheat Pool....................... Mr. E.K. Turner, Regina
3. United Grain Growers Ltd....................... Mr. A.M. Runciman, Winnipeg

CRUSHERS

1. Western Rapeseed Crushers.............................Mr. J.R. Reynolds, Saskatoon
2. " " " ....Mr. J.J. Banfield, Lethbridge
3. Eastern Rapeseed Crushers.............................Mr. M.J. McDonald, Montreal

EXPORTERS

1. Exporters & Shippers Assoc. Wpg......................Mr. C. Kroft, Winnipeg
2. " " " " ....Mr. J.T. Dallas, Winnipeg
3. Vancouver Grain Exporters Assoc......................Mr. T. Hoyer, Vancouver

FEED MANUFACTURERS

1. Canadian Feed Mfgrs. Assoc..........................Mr. A.O. Walberg, Weston, Ont.
2. British Columbia Feed Mfgrs..........................Mr. Gavin Mouat, Ft. Langley, B.C.

MARGARINE MANUFACTURERS

1. Institute of Oil Food Products.........................(to be nominated)

GRAIN EXCHANGES

1. Winnipeg Grain Exchange.............................Mr. J.E. McCannel, Winnipeg
2. Vancouver Grain Exchange............................Mr. R.A.V. Lester, Vancouver

TERMINAL ELEVATORS

1. B.C. Terminal Elevator Operators......................Mr. H.K. Moen, Vancouver
2. Lakehead Terminal Elevator Assoc ....Mr. J.E. Dehod, Winnipeg

LINE ELEVATORS

1. North-West Line Elevator Assoc.......................Mr. J.D. MacDonald, Winnipeg

SEED GROWERS

1. Canadian Seed Growers Assoc..........................(to be nominated)

PROVINCIAL DEPTS. OF AGRICULTURE

1. Representing 3 Prairie Provinces......................Mr. O.G. Bratvold, Edmonton

OTHERS

1. Director At Large.....................................Mr. H.F. Francis, Calgary

Mr. A.M. Runciman has been elected as the first president and Mr. M.J. McDonald as vice-president.

An Executive committee of seven has been chosen to conduct the business of the Association between annual meetings. Mr. Harry F. Francis of Calgary has been elected chairman.

Members of the Executive Committee are the following:

Chairman: Mr. M.F. Francis, Calgary
Mr. A.M. Runciman, Winnipeg
Mr. M.J. McDonald, Montreal
Mr. C. Kroft, Winnipeg
Mr. J.J. Banfield, Lethbridge
Mr. H.K. Moen, Vancouver
Mr. J.T. Dallas, Vancouver

Five standing committees have been established:

Finance Committee
Trade Development
Public Relations
Research Committee
Traffic and Tariffs

Mr. James McAnsh is the new Executive Director in charge of the operation of the Association, and he publishes its monthly report, the Rapeseed Digest.

All inquiries concerning the Association should be directed to:

Mrs. J. Clark
Rapeseed Association of Canada
965 Grain Exchange Building
Winnipeg 2, Manitoba.
Telephone 943-6927 (Area Code 204)

or to:

Mr. James McAnsh
400-837 West Hastings Street
Vancouver 1, B.C.
Telephone 682-7632 (Area Code 604)

or to:

Mr. H.F. Francis
United Grain Growers Ltd.
Lougheed Building
Calgary, Alta.

NUTRITIONAL VALUE OF RAPESEED MEAL

On April 15, 1966, the Feed and Fertilizer Unit of the Plant Products Division, Canada Department of Agriculture, issued a memorandum rescinding restrictions concerning the use of rapeseed meal in feed formulations.

As a result of a reference to the differences in nutritional value between expeller and solvent extracted meals, some studies were undertaken to examine meals produced by mild expeller processing.

Upon submission of the evidence of these investigations, which confirmed previous work, the Plant Products Division issued a new memorandum on February 3, 1967:

"When rapeseed meal was going through the introductory stage of use in livestock feeds an administrative ruling under the Feeds Act was issued by the Plant Products Division of the Canada Department of Agriculture on May 5, 1958 and amended June 1, 1959. This ruling which placed limitations on the use of rapeseed meal in livestock feeds **is rescinded.** In the registration of feeds under the Feeds Act, registrants will not now be required to show the amount of rapeseed meal on the application for registration.

"Our previous memo stated that evidence indicates solvent extracted rapeseed meal to be superior to Expeller Rapeseed Meal. Tests carried out in the past year (substantiate previous tests) and cast doubt on the complete validity of this statement. Therefore, in view of the accumulated evidence there is good indication that Expeller Rapeseed Meal produced under low temperature processing conditions and containing at least 6% residual rapeseed oil (fat) can be expected to give results in growth promotion not significantly different from those obtained by using solvent extracted rapeseed meal or pre-press solvent extracted rapeseed meal.

"However, rapeseed meal should still be used with some discretion in some livestock feeds, especially sow feeds; it is not unlike a number of other feed ingredients that must also be used with discretion. Recent studies in Canada on the utility and safety of Rapeseed meal have satisfactorily established that this meal can be effectively and safely used in accordance with good feed formulating practices.

"A summary of nutritional uses of rapeseed meal has been compiled in a book entitled "Rapeseed Meal for Livestock and Poultry, A Review", and copies may be obtained at a price of $2 from Queen's Printer and Controller of Stationery, Ottawa, Canada. Catalogue Number is – A53-1257. It may also be obtained from Canadian Government Bookshops in Ottawa, Toronto, Montreal, Winnipeg or Vancouver."

PROTEIN/NITROGEN FACTORS FOR OILSEEDS

The Grain Research Laboratory, Winnipeg, discusses in its Annual Report of 1966 the validity of the commonly used factor of 6.25 as a measure of protein content. Quantitative amino acid compositions can be used to calculate the protein/nitrogen ratios on a fundamental basis since, chemically speaking, amino acids minus the elements of water are equivalent to protein content.

Applying this approach to barley, oats, rye, flaxseed, rapeseed, yellow mustard and sunflower, the Grain Research Laboratory found the protein/nitrogen factor to vary from 5.3 to 5.7. The report concludes that these values are significantly lower than the commonly used factor 6.25 and it suggests that the protein content of materials used for human and animal nutrition is considerably lower than the accepted value.

TREATMENT OF RAPESEED MEAL WITH IRON SALTS

The National Research Council of Canada announced the development by Dr. C.G. Youngs of the Prairie Regional Laboratory, Saskatoon of a new chemical treatment of rapeseed meal designed to destroy potentially goitrogenic compounds.

Ferrous sulfate appeared the most convenient from the point of view of cost and non-toxic effect on animals. The process consisted of the treatment of rapeseed meal with an agueous solution of ferrous sulfate and subsequent steam-stripping and proved to be feasible and inexpensive when tested on a plant scale. A very small amount of ferrous sulfate was sufficient to achieve the complete decomposition of thioglucorides.

The treatment resulted in the production of diglucosyl-disulfide, nitriles and sulfate. Some of the nitriles formed are steam-volatile, such as 1-cyano-3-butene and 1-cyano-4-pentene while others, like hydroxynitriles are only lightly steam-volatile and remain in the meal.

The polish varieties, B. compestris, gave only very small quantities of the hydroxynitrile, while B. napus produced larger quantities.

Professor B.E. March of the University of British Columbia found in chick feed studies that treated meal gave similar growth rates to untreated meal. Professor March concluded that untreated meal caused an enlargement of the thyroid gland when fed at the 15% level, but that this goitrogenic effect of commercial meals was not reflected in the rate of growth. Similar results with regard to goitrogenicity of rapeseed meal in the absence of a growth-depressing effect were observed in experiments at the University of Alberta.

Other investigators studied the effect of iron-treated meals, derived predominantly from B. campestris varieties, on pigs. While pigs fed commercial rapeseed meal were as efficient as pigs fed soybean meal, pigs receiving iron-treated meal were less efficient in feed conversion.

Feeding hydroxynitriles to mice showed a high degree of toxicity. Until the nature of the reactions and the nutritional effect of all decomposition products are better known, the National Research Council will not recommend this treatment as a solution to the propoitrin-problem of rapeseed meal.

For further information, inquiries should be directed to:

Canadian Patents and Development Ltd.,
National Research Council,
Montreal Road,
Ottawa, Canada.

ZERO-ERUCIC ACID RAPESEED: A CORRECTION

On page 20 of the April 1967 issue of "Fats and Oils in Canada" it was erroneously stated that the rapeseed grown experimentally in Saskatchewan was derived from Brassica campestris. This is not the case, the strain grown is derived from Brassica napus, i.e. a so called Argentine variety.

In this connection it may be mentioned that the experimental acreage grown under contract in Saskatchewan in 1967 has been estimated to have fallen short of expectations and that no more than 10,000 acres of the zero-erucic acid strain may be harvested for commercial testing.

AMOUNT AND COMPOSITION OF HULL IN RAPESEED AND MUSTARD

by

Dr. C. G. Youngs

Prairie Regional Laboratory,

National Research Council,

Saskatoon, Sask.

It has been suggested from time to time that the fibre content of rapeseed meal could be reduced by removal of the hull or seed coat prior to oil extraction. To determine the feasibility of such a process the amount and composition of the hull of two varieties of rapeseed and an oriental mustard were determined. The seeds were dehulled by passing them through cracking rolls and separating the hulls from the meats by aspiration on a laboratory scale. Visual inspection indicated at least 90% removal of hulls from the meats and no more than 5% meats in the hull fraction. Oil, protein and crude fibre determinations on the original seed, hulls and meats are given in the following table:

	Tanka Rapeseed	Arlo Rapeseed	Oriental Mustard
%Hull*	16.5	18.7	13.2
%Oil*			
Seed	41.5	40.0	42.9
Hull	16.0	16.2	17.5
Meats	47.1	45.0	47.2
%Protein**			
Seed	44.7	44.2	45.8
Hull	18.7	20.6	22.2
Meats	53.6	53.4	52.3
%Crude Fibre**			
Seed	11.8	11.7	7.2
Hull	34.3	31.6	22.9
Meats	3.0	3.6	3.5

* moisture free basis

**moisture free, oil free basis

Dehulling does have the very desirable effect of reducing the fibre and increasing the protein content of the meal. However, the hull contains 6% to 7% of both the oil and protein in rapeseed and it is doubtful if the increased value of meal could offset such a loss unless the hull could be sold as a feed constituent at around one half the price of the non-dehulled meal.

ZERO-ERUCIC ACID RAPESEED OIL UTILIZATION: CANADA PACKERS' PATENT OF CANBRA SALAD OIL

The Canada Department of Agriculture developed rapeseed varieties containing erucic acid-free oils, which induced Canada Packers to examine their usefulness in salad oil formulations.

A Canadian Letters Patent, Number 726140, issued January 18, 1966, and owned by Canada Packers, describes an invention entitled "Salad Oil From Zero-Erucic Acid Rapeseed Oil", and relates to a process for the production of salad oil by partial hydrogenation and winterization.

A member of the research staff of Canada Packers Limited previously submitted a detailed account of his investigations of this oil at the annual meeting of the Canadian Committee on Fats and Oils in Ottawa.

Canada Packers Limited recently publicized the tentative terms of agreement for licensing this patent. These terms include the following major points:

1) The license will be non-exclusive
2) The license shall pay a royalty of 10 cents for each 100 pounds of salad oil derived from the use of the invention.

The name proposed for this entirely new vegetable oil is "Canbra", derived from the roots "Canadian" and "Brassica" and it is expected that the name "Canbra" will be recognized as a generic name.

Canada Packers claims:

"The oil appears to be satisfactory for shortening and margarine manufacture at least on an equivalent basis to soya oil. For salad oil and in particular the lightly hydrogenated oil, Canbra offers advantages over soybean oil in flavor, stability and improved winterizing yields.

"Typical fatty acid contents and iodine values are shown in the following table for soybean, two types of Canadian rapeseed oil, two crops of Canbra oil, hydrogenated, winterized soybean oil and hydrogenated, winterized Canbra oil".

FATTY ACIDS		PERCENT COMPOSITION LIQUID OILS Soybean	Rape		Canbra 1965	Canbra 1966	% COMPOSITION HYDRO WINTERIZED OILS Soybean	Canbra 1965	Canbra 1966
myristic	C^{14}	0.1	–	–	–	–	0.3	–	–
myristoleic	$C^{=}_{14}$	–	–	–	–	–	–	–	–
palmitic	C^{16}	10.0	3.2	2.5	4.0	3.8	13.8	4.6	4.5
palmitoleic	$C^{=}_{16}$	0.2	0.3	0.2	0.3	0.5	0.7	0.3	Tr.
stearic	C^{18}	4.4	1.2	1.3	1.7	2.0	3.7	3.3	4.0
oleic	$C^{=}_{18}$	23.5	33.5	23.4	59.6	62.6	35.5	69.1	75.7
linoleic	$C^{2=}_{18}$	52.5	19.0	17.1	20.5	20.3	43.8	15.3	13.3
linolenic	$C^{3=}_{18}$	9.4	7.3	9.3	9.7	8.9	2.2	1.9	1.2
arachidic	C^{20}	–	0.7	1.2	0.7	0.5	–	0.5	0.2
gadoleic	$C^{=}_{20}$	–	11.1	11.5	1.5	1.4	–	2.2	1.1
	$C^{2=}_{20}$		–	0.8	–	–	–	–	–
behenic	C^{22}		–	–	–	–	–	–	–
erucic	$C^{=}_{22}$	–	23.7	32.4	2.0	–	–	2.8	–
Iodine Values		130-135	109	104	112	113	112	95	92

TABLE 19

Canadian Rapeseed Prices[1]

(crop year)
(cents and eighths per bushel)

	1963-64	1964-65	1965-66	1966-67
August		254/4	232	289/5
September	278/1[2]	259/3	230/3	274/6
October	277/6	262/3	244	265/5
November	279/4	286/5	271/2	271
December	282/5	308/6	260	285/6
January	286/1	316/5	295	280/7
February	271/4	317/5	287/5	284/3
March	253/2	310	265	294/4
April	255	304/6	269/2	280/5
May	268/4	287	270/4	
June	270/2	272/6	284/2	
July	269	262/1	282/6	
Yearly average	271/5	287	266	

(1) Winnipeg Grain Exchange No. 1 Canada Rapeseed, basis in store Vancouver.
(2) Starting September 16, eleven-day average only.
Source: DBS No. 22—001

TABLE 20

Canadian Exports of Rapeseed

(tons)

Destination	1962	1963	1964	1965	1966
United Kingdom	1,775	1,820	2,296	8,922	4,055
Belgium-Luxemburg	2,783	–	–	1,696	8,369
West Germany	14,783	241	232	22,646	21,710
Italy	90,407	19,223	3,265	48,126	60,288
Netherlands	31,284	2,772	9,342	22,429	40,005
Spain	–	–	1,003	152	28
Czechoslovakia	–	–	–	15,184	–
Poland	–	–	–	9,921	–
Pakistan	–	–	–	22,462	19,841
Japan	52,309	114,738	62,492	114,556	194,498
United States	701	382	3,133	119	141
Algeria	12,225	13,888	–	–	–
France	8,550	–	–	–	–
Taiwan	–	2,205	4,235	–	–
Finland	–	–	2,246	–	–
India	–	–	2,800	–	–
Total Weight (tons)	214,817	155,267	91,041	266,213	348,936
Total Weight (thousand bushels)	8,590	6,210	3,640	10,650	13,957
Total Value (thousands of $)	20,667	16,053	10,152	30,900	38,480

Source: DBS, Trade of Canada

TABLE 21

Canadian Exports of Rapeseed Oil

(thousands of pounds)

Destination	1962	1963	1964	1965	1966
United States	714	122	391	5	(1)
Total	714	122	391	5	(1)
Value (thousands of $)	76	11	45	1	(1)

(1) In 1966 the previous class for rapeseed oil #393-56 was dropped, and the oil is now included in the basket class #393-99

Source: DBS, Trade of Canada

THE CANADIAN SUNFLOWERSEED SITUATION

A comparison of Canadian sunflowerseed crushings, Table 7, with domestic production figures indicates that during the past crop year, less than half the crop was processed into meal and oil. Most of the crop is grown in Manitoba under contract with the Co-operative Vegetable Oils Ltd. of Altona, Man. Again, about 70% of this acreage was grown with the Peredovik variety, which is high in oil content containing averages from 42.3 to 45.3% oil (dry basis), depending on the area. A smaller acreage was grown with the Armavirec variety, which ripens about 10 days earlier and shows lower yields and oil content.

The Admiral and Commander varieties are grown for the specialty bird feed trade and for the confectionery, roasting and hulled seed trades respectively. Crushing data for 1966-67 indicate that some of the Peredovik variety may not have been used for crushing but was exported as seed.

All the seed grown in Saskatchewan and Alberta is said to have been of the oilseed varieties.

Private estimates for 1967 forecast an acreage not exceeding 10,000 acres for the combined Saskatchewan and Alberta areas. Lack of success in harvesting mature seed and a trend away from summerfallowing of wheat land are said to discourage farmers from growing more sunflowerseed in that part of the Prairies.

In Manitoba, the acreage may again reach or exceed 50,000 acres in 1967, compared with 32,000 acres in 1966. The Co-op in Altona stated that there is a ready market for 50 million pounds of the oilseed varieties in Manitoba; i.e., the output of more than 60,000 acres.

In 1966 the consumption of sunflower oil is not reflected by the domestic production of about 4.4 million pounds. This oil is customarily marketed largely as salad oil in Western Canada. In 1966 East European sunflower oil entered the Canadian domestic market and it is estimated that more than 20 million pounds of this oil were used primarily in salad and cooking oils, but some also in the manufacture of margarine. European sunflower oil was offered at a price below that of domestic soybean oil.

Exports of sunflowerseed, Table 22, rose by 37% from 6,877 tons in 1965 to 9,401 tons in 1966. The average price per pound of exported seed increased from 13.7¢ to 16.5¢. Seed exports to the United States more than doubled during this period and were responsible for the increase. The United Kingdom market was reduced to insignificance, while Germany and The Netherlands maintained their previous import volume in 1966.

TABLE 22

Canadian Exports of Sunflowerseed

(short tons)

Destination	1962	1963	1964	1965	1966
United Kingdom	–	–	3	1,239	11
Belgium/Luxemburg	–	–	52	26	–
Denmark	–	–	28	22	–
Germany, West	–	777	1,089	1,697	1,776
Netherlands	–	943	1,674	792	643
United States	7,025	5,424	2,397	3,101	6,971
Sweden	–	–	(1)	–	–
Republic of South Africa	–	(1)	–	–	–
Trinidad	3	–	–	–	–
Total	7,028	7,144	5,242	6,877	9,401
Total Value (thousands of $)	1,202	1,178	790	946	1,557

(1) Less than 1 ton.

Source: DBS, Trade of Canada.

TABLE 23

Canadian Exports of Mustard Seed

(short tons)

Destination	1962	1963	1964	1965	1966
United Kingdom	560	1,683	1,109	3,209	2,016
Belgium/Luxemburg	2,230	2,762	4,878	4,716	3,080
France	–	–	–	–	827
Israel	–	–	–	–	20
Germany, West	1,186	974	2,381	2,118	3,160
Italy	6	39	33	39	44
Netherlands	612	2,313	4,347	7,839	10,322
Sweden	–	–	3	–	33
Switzerland	5	103	95	355	334
Japan	4,169	6,250	5,351	6,316	6,720
Australia	3	–	–	–	–
Peru	–	–	11	23	17
Trinidad	1	3	–	–	7
United States	4,609	8,909	8,169	12,324	24,017
Total	13,381	23,036	26,377	36,939	50,596
Total Value (thousands of $)	1,740	2,725	2,926	4,656	6,176

Source: DBS, Trade of Canada.

Comments to Table 23, Exports of Mustard Seed

Exports of mustard seed continue to grow in 1966, rising by about 37% from 37,000 tons in 1965 to 50,600 tons in 1966. Increased demand from the United States market accounted for most of this growth. Continental Europe increased its imports from Canada, while Japan's volume remained at the same level.

The Board of Grain Commissioners authorized the definition of a Commercial Grade Trade No. 4 Canada Western Domestic Mustard Seed, effective August 1, 1967. This effective date is concurrent with changes in Board Regulations eliminating off-grades "Rejected" for all classes of Domestic Mustard Seed. Therefore, as of August 1, 1967, Domestic Mustard Seed that does not qualify for the statutory grades of Nos. 1 C.W., 2 C.W., and 3 C.W. or for the Commercial Grade No. 4 C.W. as defined, will be graded as "Sample".

No. 4 C.W. mustard seed must have a minimum test weight of 50 pounds per bushel and must not contain less than 90% of one class of seed, where the class refers to yellow, brown or Oriental varieties. The standard of quality contains further the specifications for degree of soundness, i.e., maximum damaged seed, heated seeds and seeds with green endosperm, etc. It contains also a standard of cleanness, i.e., permissible contamination.

FLAXSEED, LINSEED OIL, LINSEED MEAL

The attempt to calculate supply and disposition patterns for linseed oil and meal on a calendar year basis, Table 24, may not be as meaningful as a calculation based on the crop year, however, the trends compare well with each other.

Domestic disappearance for linseed oil in 1966 has returned again to its usual level after a drop in 1965. A reduction in domestic production tended to soften the effect of smaller exports. The same reasoning can be applied to linseed meal, except that the calculation of apparent domestic disappearance shows here an 11% decline compared with a 31% rise for linseed oil.

Average flaxseed prices remained rather steady in the course of 1966, fluctuating between 290/5 and 303/3 (Table 25.)

However the validity of comparing flaxseed exports on a calendar year basis may also be challenged. The data presented in Table 26 compare well with crop year data. Exports increased 26% in 1966, rising from 451,000 tons in 1965 to 566,000 tons in 1966. The export value per ton dropped from $114 to $106 during this period. While Japan, The Netherlands and the United Kingdom together accounted for more than 60% of Canada's exports, 18 countries shared this export market. Belgium, West Germany, Spain, Czechoslovakia and Yugoslavia were other substantial customers. Despite a decline of 21% in exports to the United Kingdom, total exports to Western Europe increased by more than 100,000 tons.

Linseed oil exports, Table 22, to the United Kingdom were cut in half in 1966, and the moderate volume reported to have been exported to the United States may represent a transshipment.

Linseed meal exports, Table 28, have returned to the level of the years 1962-64 as a result of a reduction of exports to the United Kingdom. Some doubt has been expressed about the validity of the volume of 21,278 tons reported to have been exported to the United Kingdom in 1965. Barbados and Ireland purchased moderate quantities of linseed meal in 1966. As a rule, Canada exported about 30% of the domestic linseed meal production.

While nearly all rapeseed was crushed in Western Canada, the reverse holds true for flaxseed. Less than 10% of this Prairie crop was crushed in Western Canada.

The Board of Grain Commissioners published preliminary data on export clearances of flaxseed for the crop year 1966-67 and reported a volume of 16.6 million bushels (465,000 tons), some 2.3 million bushels (64,500 tons) below the 1965-66 exports. A decrease of 1.6 million bushels in purchases by Britain dropped this market from first place last year, to third in 1966-67, with 3.5 million bushels. Increased sales helped Japan to become Canada's largest customer with 4.8 million bushels and The Netherlands with 4.0 million bushels occupied the second place. Reduced shipments to Belgium, France and the Federal Republic of Germany caused a one-million-bushel decline in imports of the European Economic Community.

Canadian farmers marketed 20.1 million bushels of flaxseed in 1966-67, compared with 23.9 million a year earlier. The crushing volume declined slightly from 2.5 million to 2.4 million bushels during this period, and total visible stocks increased from 8.9 million bushels on July 31, 1966 to 10.5 million bushels in 1967.

Outlook:

Latest D.B.S. estimates of a very sharp drop in the 1967 flaxseed crop to 10.3 million bushels would bring the total 1967-68 supplies to 20.8 million bushels, not counting farm stocks. If Canada maintains the present crushing and export volumes, the supplies will barely meet the demand. Soybean oil and other oilseed meals are likely to make inroads in some of the markets of flaxseed products.

Apart from Canada, the United States and Argentina are the world's major exporters of flaxseed and linseed products.

In 1966, Argentina exported 131,000 tons of linseed oil. Argentina does not permit the export of flaxseed. The United States exported 187,000 tons of flaxseed and 63,000 tons of linseed oil.

Argentina's flaxseed crop in 1966-67 amounted to 595,000 tons and has been forecast to range around 500,000 tons in 1967-68. The Argentine government has raised the guaranteed price to 2,500 pesos, up 850 pesos from last year.

The preliminary United States flaxseed crop estimate of 520,000 tons for 1967, compared with 667,000 tons last year, also shows a drastic reduction.

For these three major flaxseed producing and exporting countries, the total crop estimate, therefore, shows a drop from 1.9 million tons in 1966-67 to 1.3 million tons in 1967-68. On an oil basis, this represents a decline from 673,000 tons to 460,000 tons. Oil World estimates that total supplies of these three countries in 1967-68 will be reduced by about 300,000 tons to a level of 865,000 tons of seed, the smallest supply in years.

TABLE 24

Canadian Supply and Distribution of Linseed Oil and Meal

(millions of pounds)

	1962	1963	1964	1965	1966
Linseed Oil					
Stocks, Jan. 1 (1)	10.2	9.8	8.7	7.6	11.6
Domestic Production	45.4	46.7	58.9	54.9	48.6
Supply	55.6	56.5	67.6	62.5	60.2
Exports	4.4	8.0	19.0	22.5	12.4
Stocks, Dec. 31	9.8	8.7	7.6	11.6	10.5
Apparent Domestic Disappearance	41.4	39.8	41.0	28.4	37.3
			(thousands of tons)		
	1962	1963	1964	1965	1966
Linseed Meal					
Stocks, Jan. 1	3.5	1.3	0.4	5.1	1.7
Domestic Production	40.7	41.3	53.6	48.8	42.5
Supply	44.2	42.6	54.0	53.9	44.2
Exports	12.7	12.4	15.1	23.3	15.3
Stocks, Dec. 31 (1)	1.3	0.4	5.1	1.7	3.4
Apparent Domestic Disappearance	30.2	29.8	33.8	28.9	25.5

(1) Stocks held by crushing plants

Source: Based on DBS data

TABLE 25

Canadian Flaxseed Prices(1)

(crop year)

(cents and eighths per bushel)

	1962-63	1963-64	1964-65	1965-66	1966-67
August	368	319/3	331/1	307/2	300/7
September	359/6	321/1	324/4	314/1	299/2
October	338	318/3	318/4	306/3	292
November	324/1	316	315/2	293/3	290/5
December	320/7	316/1	314/1	292/5	293/2
January	324/3	322/4	315	299	293/5
February	327/4	322/4	323/1	303/3	295/6
March	331/4	323/2	324/7	297/7	299/6
April	331/3	316/2	321/6	296/3	301/5
May	334/1	314	324/5	292/6	
June	329	318/2	319/2	294	
July	331	328	312/3	295/7	
Yearly average	335	319/6	320/3	299/3	

(1) Winnipeg Grain Exchange No.1 C.W. Flaxseed, basis Fort William-Port Arthur

Source: DBS No. 22-001

TABLE 26

Canadian Exports of Flaxseed

(short tons)

Destination	1963	1964	1965	1966	August –December 1965	August –December 1966
United Kingdom	120,786	141,303	142,356	112,164	81,346	63,600
Ireland	–	1,008	–	–	–	–
Belgium-Luxemb.	12,812	9,368	11,201	38,588	–	4,189
Finland	4,485	2,492	–	2,993	–	–
France	8,877	20,296	17,113	11,548	6,851	9,184
Germany, West	11,327	22,178	31,839	44,439	9,909	20,121
Italy	–	538	540	8,849	–	8,019
Netherlands	13,878	59,471	82,283	123,186	44,903	75,568
Norway	5,646	8,850	7,565	11,484	3,771	4,956
Portugal	3,255	6,887	2,314	4,830	–	2,506
Spain	5,799	15,985	10,943	34,343	4,802	15,868
Switzerland	–	–	–	57	–	57
Czechoslavakia	5,770	6,753	–	14,968	–	3,528
Germany East	10,351	–	–	4,492	–	–
Yugoslavia	3,528	9,921	25,817	20,504	25,817	10,648
Israel	1,294	4,611	3,486	2,112	1,045	–
Japan	110,924	104,545	114,559	124,282	46,546	48,003
Korea	–	–	661	6,679	–	–
United States	40	6	1	48	–	48
Greece	1,784	1,422	112	–	112	–
Morocco	2,264	–	–	–	–	–
Australia	224	–	–	–	–	–
Peru	–	2	–	–	–	–
Trinidad	1	–	–	–	–	–
Total	323,045	415,637	450,790	565,565	225,102	266,293
Total Value (thousands of $)	38,560	48,662	51,658	60,816	25.090	27,989

TABLE 27

Canadian Exports of Linseed Oil

(thousands of pounds)

Destination	1962	1963	1964	1965	1966
United Kingdom	4,364	7,966	17,998	22,497	11,211
Syria	12	–	9	–	–
Nigeria	–	–	10	–	–
Peru	4	2	6	–	4
Venezuela	12	50	66	4	–
Bermuda	3	2	6	–	–
British Honduras	–	–	1	–	–
Barbados	16	14	13	12	11
Jamaica	–	–	1	–	–
Leew. Wind. Is.	1	–	1	1	–
Cuba	–	–	881	–	–
Netherlands Antilles	1	3	3	1	–
United States	24	–	1	–	1,129
Ecuador	–	–	–	3	–
Honduras	1	3	–	–	–
Columbia	–	7	–	–	–
Total	4,445	8,039	18,996	22,518	12,359
Total Value (thousands of $)	588	953	2,281	2,598	1,276

Source: DBS, Trade of Canada.

TABLE 28

Canadian Exports of Linseed Oil Cake and Meal

(short tons)

Destination	1962	1963	1964	1965	1966
United Kingdom	9,996	10,394	12,145	21,278	9,336
Guiana	264	124	192	114	–
British Honduras	1	–	–	–	–
Barbados	30	79	38	12	2,626
Leew.-Wind. Is.	114	96	117	114	185
Trinidad	827	976	860	735	878
United States	1,505	601	743	1,002	556
Ireland	–	–	1,046	–	1,544
Venezuela	–	105	–	–	–
Cuba	5	–	–	–	–
Netherlands Antilles	–	1	–	–	–
Total	12,742	12,376	15,141	23,255	15,257
Total Value (thousands of $)	1,016	1,117	1,260	1,897	1,347

Source: DBS, Trade of Canada.

CANADIAN TRADE IN SPECIFIED EDIBLE VEGETABLE FATS & OILS

Comments to Tables 29 to 38:

The commodities covered by these tables cover ingredients for final products, which frequently compete with each other or with domestically produced oils. Prices of some oils like peanut oil, sunflowerseed oil, rapeseed oil and palm oil produced in Europe or Africa dropped to a level where they could successfully compete on the North America market. As a result Canada's imports grew considerably.

	1965	1966
	(millions of pounds)	
Palm Oil	18.9	26.8
Peanut Oil	9.2	31.6
Vegetable Oils & Fats (mainly sunflowerseed & rapeseed oils)	7.5	38.7
Cottonseed Oil	47.6	32.2
	83.2	129.3

This increase of 46.1 million pounds in an area where oils are interchangeable had a considerable influence on the volume of production of rapeseed and soybean oils in Canada. Palm oil and peanut oil enjoy easy access to Canada, since they come from Malaysia and Nigeria, and other Commonwealth countries. The present unrest in Nigeria may affect the future flow of oil from that country.

Sunflowerseed oil and rapeseed oil are included in the import basket class "Vegetable Oils and Fats", and according to DBS data listed The Netherlands or West Germany as the country of origin. An estimated volume of more than 20 million pounds of sunflowerseed oil and 10 million pounds of rapeseed oil entered Canada in 1966. The sunflowerseed oil must have been derived from East European sunflowerseed, and the rapeseed oil could have had several countries, like Sweden, Poland, East Germany as its actual origin.

The drastic reduction in American cottonseed acreage is reflected in the decrease of cottonseed oil imports from the United States, which has traditionally been a major supplier of this oil. It is interesting to note that the United States actually imported a small volume of European cottonseed oil in 1967.

Corn oil import also rose by 41% from 14.4 million pounds in 1965 to 20.3 million pounds in 1966. Domestic production is not reported, since less than three firms are involved. However, in view of the use of corn oil in two different products, margarine and salad oil, it can be assumed that the relatively large rise in imports does not reflect any significant increase in corn oil margarine consumption. Rather, it may be assumed that corn oil also benefited from the general expansion of the salad oil market.

With regard to coconut oil imports, the rise by three million pounds in 1966 compared with 1965 is not as significant as the shift in origin. Malaysia has largely replaced Ceylon as Canada's major supplier of coconut oil, doubling her exports to Canada within one year. Philippine coconut oil, either imported directly or via the United States, accounted for 22% of the Canadian imports in 1966 compared with 13% in 1965.

Palm kernel oil imports did not change significantly in 1966. However, instead of the United Kingdom, Nigeria is now listed as the main supplier, which indicates the effect of the Nigerian policy to process palm kernels domestically.

Ghana and the United Kingdom again accounted for most of the imports of cocoa butter into Canada, which supplements the unreported volume of cocoa butter derived from imported beans in Canada. It can be assumed that all imported cocoa butter has been produced by pressing rather than by solvent extraction.

Olive oil imports serve a special market which showed no changes in 1966.

Canada's exports "Vegetable Oils and Fats", Table 38, which include specialty fats and also salad and cooking oils exported to West Indian countries, remained relatively insignificant in 1966.

TABLE 29

Canadian Imports of Cocoa Butter

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
United Kingdom	3,875	2,713	2,541	2,070	4,821
Germany, West	–	47	11	28	–
Italy	285	882	143	–	–
Netherlands	1,465	1,313	2,616	1,196	779
Poland	–	–	42	–	–
China, Communist	–	–	–	45	–
Ghana	3,702	4,279	7,531	9,724	8,928
Jamaica	190	710	146	56	235
Trinidad – Tobago	70	98	100	50	100
United States	200	298	29	16	20
Brazil	3,080	1,066	–	–	661
Ecuador	11	–	–	–	–
Venezuela	22	–	–	–	–
Dominican Republic	–	111	–	–	–
Spain	–	33	–	–	–
French Equatorial Africa	22	–	–	–	–
Cameroons	–	220	–	–	–
Costa Rica	14	5	–	–	–
Total	12,935	11,766	13,157	13,185	15,545
Total Value (thousands of $)	7,188	7,268	7,388	6,658	8,065
Average Price (cents per pound)	55.5	61.8	56.1	50.6	52.0

Source: DBS, Trade of Canada.

TABLE 30

Canadian Imports of Coconut Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
United Kingdom	5	1	9,077	354	3,109
Germany, West	4	6	7	7	2
Ceylon	34,422	25,796	22,464	18,257	1,841
Malaysia	16,851	9,576	4,707	14,124	28,262
Ireland	4	–	–	–	–
Philippines	1,792	–	1,968	2,386	3,275
United States	1,325	2,432	1,528	2,931	6,152
Fiji	–	34	–	57	–
Australia	–	–	–	1,502	–
Total	54,402	37,845	39,750	39,618	42,641
Total Value (thousands of $)	5,590	4,343	5,329	6,122	5,800
Average Price (cents per pound)	10.3	11.5	13.4	15.5	13.6

Source: DBS, Trade of Canada.

TABLE 31

Canadian Imports of Corn Oil(1)

(thousands of pounds)

Country of Origin	1964	1965	1966
United Kingdom	898	1,598	667
Netherlands	1,102	–	1,963
United States	15,067	12,779	15,922
France	–	–	886
West Germany	–	–	870
Total	17,067	14,377	20,308
Total Value (thousands of $)	2,068	2,341	3,706
Average price (cents per pound)	12.1	16.3	18.3

(1) Until December 1963 corn oil was included with Class No. 1620 Vegetable Oils Crude and Refined, nop.
Source: DBS, Trade of Canada.

TABLE 32

Canadian Imports of Cottonseed Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
Netherlands	–	–	–	–	3,514
United States	27,080	33,668	37,422	47,646	28,711
United Kingdom	4,232	4,860	–	–	–
Argentina	1,971	–	–	–	–
Total	33,283	38,528	37,422	47,646	32,225
Total Value (thousands of $)	4,193	4,494	4,247	6,102	4,646
Average Price (cents per pound)	12.6	11.7	11.3	12.8	14.4

Source: DBS, Trade of Canada.

TABLE 33

Canadian Imports of Olive Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
West Germany	–	–	–	–	2
France	52	108	94	159	84
Greece	526	124	247	410	317
Italy	1,277	466	1,012	653	1,030
Portugal	169	91	240	163	296
Spain	1,291	870	1,869	1,093	1,571
Israel	1	–	1	1	–
Turkey	11	–	11	10	–
Tunisia	26	–	48	–	–
United States	181	152	183	244	71
Cyprus	–	99	–	–	–
Total	3,534	1,912	3,705	2,731	3,371
Total Value (thousands of $)	1,112	745	1,191	1,008	1,250
Average Price (cents per pound)	31.4	39.1	32.2	36.7	37.1

Source: DBS, Trade of Canada.

TABLE 34

Canadian Imports of Palm Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
Malaysia	28,636	25,162	13,112	18,913	26,289
United Kingdom	–	22	–	–	472
Congo	48	–	–	–	–
United States	2,432	299	–	–	–
Total	31,116	25,483	13,112	18,913	26,761
Total Value (thousands of $)	2,958	2,477	1,393	2,180	2,800
Average Price (cents per pound)	9.5	9.7	10.6	11.5	10.5

Source: DBS, Trade of Canada.

TABLE 35

Canadian Imports of Palm Kernel Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
United Kingdom	4,979	7,972	6,097	8,466	278
Netherlands	65	78	409	211	318
Nigeria	–	–	821	–	8,463
United States	–	30	–	121	123
Ireland	6	–	–	–	–
Congo, Leopoldville	–	–	–	1,068	–
Total	5,050	8,080	7,327	9,877	9,182
Total Value (thousands of $)	587	1,092	1,053	1,656	1,318
Average Price (cents per pound)	11.7	13.5	14.4	16.8	14.4

Source: DBS, Trade of Canada.

TABLE 36

Canadian Imports of Peanut Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
Netherlands	–	–	–	–	1,365
United Kingdom	6,118	2,524	135	5	3,394
France	27	56	57	56	38
Nigeria	10,818	11,874	7,271	5,205	24,084
Hong Kong	115	136	128	129	129
United States	302	2,644	2,056	3,852	2,545
Republic of South Africa	1,423	1,347	–	–	–
Total	18,803	18,580	9,647	9,247	31,555
Total Value (thousands of $)	2,629	2,403	1,213	1,421	4,499
Average Price (cents per pound)	14.0	12.9	12.6	15.4	14.3

Source: DBS, Trade of Canada.

TABLE 37

Canadian Imports of Vegetable Oils and Fats

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
Israel	–	–	–	–	5
United Kingdom	6,069	6,308	224	164	59
Austria	4	14	3	14	10
Belgium/Luxemburg	556	449	–	–	–
Germany, West	2	616	2,209	3,286	4,756
Netherlands	2,753	10,653	668	24	32,513
Sweden	86	342	41	2,808	10
Republic of South Africa	1,132	700	–	–	–
Hong Kong	21	13	16	14	11
India	1	–	–	–	–
Japan	6	8	6	7	05
Colombia	102	–	–	–	–
United States	5,111	7,956	2,074	1,154	1,279
Denmark	–	11	16	15	16
France	–	1,358	–	1	–
Total	15,852	28,429	5,256	7,488	38,664
Total Value (thousands of $)	2,945	3,954	755	1,064	5,090

Source: DBS, Trade of Canada.

TABLE 38

Canadian Exports of Vegetable Oils and Fats(1)

(thousands of pounds)

Destination	1962	1963	1964	1965	1966
United Kingdom	100	442	–	–	–
France	387	392	–	–	–
Republic of South Africa	–	(2)	1	–	–
Japan	77	147	16	–	–
Jamaica	2	–	(2)	2	–
Leew.-Wind. Is.	1	2	3	9	7
Cuba	–	–	–	3	5
United States	528	1,222	384	512	435
Guatemala	–	1	–	–	–
Nicaragua	2	21	–	–	–
Syria	–	5	–	–	–
Cyprus	–	–	–	1	–
Australia	–	–	–	23	23
British Guiana	2	6	6	40	12
Bermuda	1	1	3	40	–
British Honduras	–	–	–	2	2
Barbados	–	6	36	34	47
Trinidad-Tobago	–	2	4	13	7
Bahamas	–	–	–	–	3
Germany	–	36	9	–	–
Colombia	1,543	–	–	–	–
Total	2,642	2,283	458	677	543
Total Value (thousands of $)	335	165	79	130	114

Source: DBS, Trade of Canada.

(1) This export class #39-399 includes sunflower oil, salad and cooking oil and certain specialty fats like pan greases.

(2) Less than one thousand pounds.

TABLE 39

Canadian Imports of Castor Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
United Kingdom	28	15	2	7	5
India	22	13	21	11	13
Brazil	3,039	5,757	5,193	4,830	3,418
United States	425	164	222	161	218
Netherlands	–	–	–	1,769	546
Japan	331	–	–	–	427
Total	3,845	5,948	5,438	6,778	4,627
Total Value (thousands of $)	523	695	618	801	644
Average price (cents per pound)	13.6	11.7	11.4	11.8	13.9

Source: DBS, Trade of Canada.

TABLE 40

Canadian Imports of Oiticica Oil

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
Brazil	559	448	214	204	149
United States	132	–	32	–	–
Total	691	448	246	204	149
Total Value (thousands of $)	122	128	50	49	30
Average price (cents per pound)	17.7	28.6	20.4	24.0	20.1

Source: DBS, Trade of Canada.

TABLE 41

Canadian Imports of Tung Oil(1)

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
United Kingdom	–	–	11	–	–
Hong Kong	87	208	1,101	948	1,623
Argentina	2,116	1,318	1,307	934	789
Paraguay	–	84	208	62	–
United States	416	598	232	198	96
Netherlands	–	9	–	–	–
Total	2,619	2,217	2,860	2,142	2,508
Total Value (thousands of $)	1,039	900	744	547	514
Average Price (cents per pound)	39.7	40.6	26.0	25.5	20.5

(1)Reported as Chinawood Oil until 1963, and as Chinawood/Tung Oil since 1964.
Source: DBS, Trade of Canada.

TABLE 42

Canadian Imports of Chemically Modified Oils, Fats and Waxes

(thousands of pounds)

Country of Origin	1964	1965	1966
United Kingdom	18	128	16
Germany, West	40	90	83
Netherlands	157	129	292
Rep. So. Africa	–	–	16
United States	14,331	12,632	8,184
Norway	10	10	–
Total	14,556	12,989	8,591
Total Value (thousands of $)			

Source: DBS, Trade of Canada

TABLE 43

Canadian Imports of Mixtures and Derivatives of Oils, NES

(thousands of pounds)

Country of Origin	1964	1965	1966
United Kingdom	98	91	27
Germany West	49	29	2
Netherlands	9	12	4
United States	7,750	9,726	11,091
Sweden	3	–	–
Total	7,909	9,859	11,124
Total Value (thousands of $)	1,191	1,112	1,163

Source: DBS, Trade of Canada

TABLE 44

Canadian Exports of Chemically Modified Oils, Fats and Waxes

(thousands of pounds)

Destination	1963	1964	1965	1966
United Kingdom	267	104	227	465
Syria	–	5	–	10
Australia	795	1,040	1,104	1,286
British Guiana	–	31	83	81
Peru	–	–	5	5
Venezuela	94	91	125	81
United States	5,871	1,890	1,595	1,847
France	2	–	–	–
Netherlands	49	–	–	–
Ecuador	2	2	–	–
Bahamas	2	–	(1)	–
Bermuda	2	–	–	–
Leew.-Wind. Is.	1	2	3	–
Honduras	–	1	–	–
Barbados	–	1	5	–
Trinidad	5	2	1	–
Neth. Ant.	5	(1)	7	–
Jamaica	–	13	–	–
Guatemala	–	2	–	–
Total	7,096	3,184	3,156	3,779
Total Value (thousands of $)	468	257	258	303

(1) less than 1,000 pounds

Source: DBS, Trade of Canada

CANADIAN MARINE OILS AND MEALS

Review of Canadian Marine Oil and Meal Situation

Apparent domestic disappearance, Table 47, of marine oils in 1966 increased by 10.8 million pounds over 1965. The total marginally exceeded domestic production for the first time since 1963.

Canadian production of marine oils, Table 45, in 1966 remained substantially at the same level as during the previous two years. British Columbia herring oil production declined by 13.3 million pounds (31.8%), Table 46, from 1965. The total catch on the Pacific Coast declined from 180,000 tons in 1965-66 to 134,000 tons during the 1966-67 season. The Department of Fisheries is investigating the causes for this decline. Experts claim that small spawns, rather than overfishing, are the principal cause and it is hoped that the present investigation will lead to corrective measures.

Meanwhile, the recent expansion of the herring reduction industry on the Atlantic Coast raised the output in that region to 15.9 million pounds, i.e., more than twice the 1965 output. It is worth noting that Atlantic Coast herring oil production was 12.6 million pounds below the West Coast volume, even though their respective outputs of herring meal, Table 51, were very close. The major cause may be traced to the lower oil content of the herring caught off the Atlantic Coast, where oil recoveries amounted to an estimated 6% compared with 9.6% in British Columbia.

A decline in world fish oil prices resulted in a two million pound increase of fish oil imports into Canada in 1966. The United States' share of 1.5 million pounds of menhaden oil in 1965 increased to 3.1 million pounds in 1966. Icelandic herring oil imports rose from 5.5 million pounds in 1965 to 6.2 million pounds in 1966.

Marine oil exports dropped to 8.9 million pounds, the lowest level since 1962. In particular, sales of herring oil to the United Kingdom fell from 6.8 million pounds in 1965 to 0.7 million pounds in 1966.

Whale oil exports to the United Kingdom and the United States amounted to only 1.5 million pounds in 1966.

Fish meal production in 1966 remained at 1965 levels, Table 51. As a result of the Atlantic Coast herring reduction industry expansion, output from this source increased by 14.7 thousand tons (114.8%) over 1965. At the same time, Pacific Coast herring meal production declined by 12.9 thousand tons.

The Atlantic Coast reduction industry in 1966 produced 72% of Canadian fish meal as compared to to 39% in 1963.

The expansion of the Atlantic groundfish processing industry in 1965-66 has resulted in an increase in meal production.

Heavy warehouse stocks of frozen groundfish products precluded the anticipated increase in output from this source and held groundfish meal production at 1965 levels.

Canadian exports of fish meal declined slightly, Table 54, in 1966. The United Kingdom and the United States remained Canada's major customers.

REVIEW OF THE CANADIAN FISH REDUCTION INDUSTRY

Herring Landings

Herring Landings on the Atlantic Coast for 1966 were 275,000 tons, compared with 202,000 tons in 1965. The landed value increased from $4.3 million to $6.2 million. Herring is rapidly becoming the largest of the fish catches on the Atlantic Coast. Cod, with 281,000 tons landed, retained first place in 1966, but with a reduced margin.

Atlantic herring landings by provinces were as follows:

	1964	1965	1966
		(thousand tons)	
Newfoundland......	9.3	13.8	31.9
Nova Scotia........	49.3	71.6	108.1
New Brunswick	75.4	91.4	115.6
P.E.I.	1.8	2.3	2.1
Quebec	20.5	22.9	17.7
Total	156.3	202.0	275.4

The establishment of new herring reduction facilities on the East Coast continued in 1966. These new plants added approximately 3,000 tons per day to the Atlantic coast reduction capacity in 1966. Plants with a combined capacity of 4,000 tons per day are scheduled to start operations in 1967. In addition, new plants are being proposed and the expansion of existing plants is being considered, which could further augment the capacity.

As a result, by 1968 there could be 7,000 to 9,000 tons per day of reduction capacity which did not exist prior to 1965. The British Columbia industry has a capacity of 7,000 tons per day.

Cumulative landed values per ton of herring for 1966 with comparitive 1965 figures are as follows:

	1965	1966
British Columbia	$28.07	$36.43
New Brunswick	23.57	24.31
Nova Scotia	20.15	21.63
Newfoundland..........	21.83	22.94

Table 45

Canadian Production of Marine Oils by Types and Areas

(millions of pounds)

Oil	1962	1963	1964	1965	1966
Atlantic Coast					
Groundfish					
Body and Offal	0.9	1.4	1.4	2.0	2.5
Liver	6.5	7.4	5.8	4.6	4.1
Herring	1.5	1.4	4.7	7.2	15.9
Other Fish Liver	–	–	(1)	(1)	(1)
Seal	1.7	1.5	1.3	3.0	3.3
Other	0.1	0.1	0.6	1.0	4.3
Atlantic Total	10.7	11.8	13.8	17.8	30.1
Pacific Coast					
Herring	40.8	52.8	44.5	41.8	28.5
Total, Canada	51.5	64.6	58.3	59.6	58.6

Source: Based on DBS Cat. No. 24-002

(1) Confidential, included with "Other".

TABLE 46

British Columbia Herring Production Report

Cumulative totals for the fishing season, which ends each year during the month of March.

	Final 10/3/63	Final 28/3/64	Final 27/3/65	Final 26/3/66	Final 4/3/67
Total Catch, tons	265,647	262,045	240,580	180,365	133,823
Production					
Meal, tons	48,035	46,778	43,062	32,163	23,356
Oils (thousands of pounds)	44,100	45,100	50,300	35,600	25,684
Average Yields					
% Meal	18.2	17.9	18.0	17.9	17.5
% Oil	8.3	8.7	10.5	9.9	9.6

Source: Department of Fisheries, Vancouver Office.

TABLE 47

Canadian Supply & Disposition of Marine Oils

(millions of pounds)

	1962	1963	1964	1965	1966
Production	51.5	64.6	58.3	59.6	58.6
Imports	43.9	35.8	1.1	8.2	10.2
Exports	7.4	17.2	34.7	19.7	8.9
Apparent Domestic Disappearance	88.0	83.2	24.7	48.1	59.9

Source: Based on DBS data

TABLE 48

Canadian Imports of Marine Oils by Types

(millions of pounds)

	1962	1963	1964	1965	1966
Fish Liver & Visceral Oil	–	–	0.1	0.3	0.1
Fish & Marine Animal Oil	42.1	24.2	1.0(1)	7.9	10.1
Whale & Spermaceti	0.9	0.6	–	–	–
Cod Liver Oil	0.9	1.0	–	–	–
Total	43.9	25.8	1.1	8.2	10.2
Total Value (thousands of $)	2,112	1,707	.168	.862	.863

Source: DBS Cat. No. 65–007
(1) Includes Whale Oil, previously included in Class 2297; Change in classification.

TABLE 49

Canadian Exports of Marine Oils by Types

(millions of pounds)

	1962	1963	1964	1965	1966
Herring Oil	(1)	1.0	23.3	7.6	0.8
Cod Liver Oil, Sun Rotted	5.9	10.0	7.0	5.1	4.5
Fish and Marine Animal Oil, N.E.S.	(1)	1.3	1.1	2.5	2.2
Whale Oil	1.3	4.9	3.2	4.5	1.4
Fish Liver & Visceral Oils	(1)	(1)	(1)	(2)	(2)
Total	7.4	17.2	34.7	19.7	8.9
Total value (thousands of $)	.504	1,067	2,993	1,929	.798

Source: Based on DBS No. 65-004

(1) Less than 50,000 pounds.

(2) Fish Liver and Visceral Oil not listed after 1964.

TABLE 50

Use of Marine Oils in Margarine and Shortening

Year	Used in Margarine (mil. lbs.)	Per Cent of Total Fats in Margarine	Used in Shortening (mil. lbs.)	Per Cent of Total Fats in Shortening	Total Marine Oils in Margarine & Shortening (mil. lbs.)	Per Cent of Total Fats in Margarine & Shortening
1960	12	9.1	8	4.5	20	6.0
1961	32	21.3	17	10.2	49	13.9
1962	48	32.2	22	11.9	70	19.0
1963	65	46.6	23	12.4	88	24.7
1964	30	21.0	13	7.0	43	11.7
1965	30	22.1	15	7.7	45	12.6
1966	(1)	(1)	(1)	(1)	48	13.3

Source: Based on DBS data.

(1) Individual figures not available for 1966 due to a change in reporting procedure.

TABLE 51

Canadian Production of Fish Meals by Type and Area

(thousands of tons)

	1962	1963	1964	1965	1966
Atlantic Coast					
Groundfish	33.4	28.4	25.3	42.8	41.6
Herring	4.4	4.7	6.2	12.8	27.5
Other	–	0.6	0.6	0.9	1.5
Atlantic Total	37.8	33.7	32.1	56.5	70.6
Pacific Coast					
Herring	40.5	51.8	44.0	40.1	27.2
National Total	78.3	85.5	76.1	96.6	97.8

Source: Based on DBS Cat. No. 24–002

TABLE 52

Canadian Supply and Disposition of Fish Meal

(thousands of tons)

	1962	1963	1964	1965	1966
Production	78.2	85.5	76.6	96.6	97.8
Imports	0.2	3.0	4.9	0.1	(1)
Exports	47.4	55.6	62.5	58.9	52.9
Apparent Domestic Disappearance	31.0	32.9	19.0	37.8	44.9

Source: Based on DBS data.

(1) Less than 50 tons.

Table 53

Canadian Imports of Fish Meal

(thousands of tons)

Country of Origin	1962	1963	1964	1965	1966
Peru	–	2.7	–	–	–
United States of America	0.2	0.1	0.1	0.1	(1)
Republic of South Africa	–	0.2	4.8	–	–
Total	0.2	3.0	4.9	0.1	(1)
Total Value (thousands of $)	19	327	552	10	1

(1) Less than 50 tons

Source: DBS Cat. No. 65–007

TABLE 54

Canadian Exports of Fish Meal and Condensed Solubles

(thousands of tons)

	1962	1963	1964	1965	1966
Herring Meal & Pilchard Meal	36.7	45.2	50.5	40.1	36.7
Fish Meal, N.E.S.	10.7	10.4	12.0	18.8	16.3
Fish Condensed Homogenized Solubles	1.7	2.2	1.9	1.8	1.6
Total (Meal Only)	47.4	55.6	62.5	58.9	53.0
Total Value (Meal Only) (thousand $)	6,509	7,677	8,851	9.336	9.379

Source: Based on DBS Cat. No. 65–004

TABLE 55

Canadian Imports of Tallow[1]

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
Sweden	111	14	–	–	–
Australia	662	–	7	–	–
New Zealand	11	–	–	–	–
United States	4,169	5,234	8,673	8,007	7,002
Total	4,953	5,247	8,680	8,007	7,002
Total Value (thousands of $)	475	518	799	915	802
Average Price (cents per pound)	9.6	9.9	9.2	11.4	11.4

(1) Until 1963 tallow was imported as Class No. 2308, and changed to Class No. 39-126 in 1964.

Source: DBS, Trade of Canada.

TABLE 56

Canadian Exports of Inedible Tallow

(thousands of pounds)

Destination	1962	1963	1964	1965	1966
United Kingdom	14,521	39,029	59,954	44,907	41,686
Italy	1,839	–	2,040	1,520	2,684
Netherlands	12,432	5,278	654	13,500	16,649
Iran	–	1,756	1,926	–	1,279
Ghana	–	1,291	1,164	2,679	3,261
Southern Rhodesia	–	–	473	–	–
Republic of South Africa	2,215	2,745	5,377	13,252	9,482
Malaysia	–	200	100	–	–
Japan	18,303	22,946	23,754	25,456	19,944
Korea	–	–	110	–	–
Guiana	–	–	126	457	717
Colombia	1,616	610	250	100	–
Ecuador	993	2,261	3,515	8,247	1,852
Venezuela	–	–	221	–	–
Barbados	517	285	895	1,075	1,040
Leew.-Wind. Is.	239	202	148	263	204
Trinidad-Tobago	380	670	886	3,607	3,235
Cuba	33,635	22,952	35,577	14,277	19,781
El Salvador	–	2,829	103	2,067	899
United States	1,676	1,179	598	354	969
Germany, West	–	–	–	2,170	660
Spain	–	–	–	998	–
Switzerland	–	–	–	638	–
Thailand	–	22	–	–	–
Rhodesia and Nyasaland	–	1,347	–	–	–
Jamaica	3,562	1,568	–	–	–
Belgium	599	–	–	–	–
Dominican Republic	100	401	–	–	–
Nicaragua	50	–	–	–	–
Portugal	–	662	–	–	–
Surinam	–	–	–	–	8
Pakistan	–	–	–	–	11,957
Total	92,676	108,233	137,872	135,564	136,308
Total Value (thousands of $)	6,144	7,237	10,760	12,512	11,846

Source: DBS, Trade of Canada.

TABLE 57

Canadian Imports of Lard(1)

(thousands of pounds)

Country of Origin	1962	1963	1964	1965	1966
United States	24,784	17,133	16,001	20,734	28,439
Total	24,784	17,133	16,001	20,734	28,439
Total Value (thousands of $)	2,506	1,491	1,647	2,564	3,428
Average Price (cents per pound)	10.1	11.5	10.3	12.3	12.1

Source: DBS, Trade of Canada.

(1) Until December 1962 this class comprised "Lard and Compounds Stearine".

TABLE 58

Canadian Imports of Grease, Including Wool Grease and Lanolin(1)

(thousand of pounds)

Country of Origin	1962	1963	1964	1965	1966
United Kingdom	352	223	443	462	277
Ireland	–	–	22	–	–
Germany, West	23	72	74	63	–
Australia	–	–	49	107	169
United States	21,472	29,582	32,001	14,672	9,898
Japan	–	–	–	5	12
Total	21,846	29,877	23,589	15,308	10,356
Total Value (thousands of $)	1,422	1,962	1,939	1,558	998

Source: DBS, Trade of Canada.

(1) Until 1963 this class was listed as No. 2304: Grease and Degras, and has appeared under the above description from 1964 as No. 391-15.

TABLE 59

Canadian Imports of Animal Oils and Fats(1)

(thousands of pounds)

Country of Origin	1962(2)	1963	1964	1965	1966(3)
Poland	–	–	2	–	2
United States	1,825	3,117	1,335	748	796
United Kingdom	12	8	–	12	–
Australia	–	59	–	10	6
Belgium/Luxembourg	17	11	–	–	–
Ireland	–	29	–	–	–
Total	1,881	3,224	1,337	771	804
Total Value (thousands of $)	192	416	174	124	159

(1) Import class #39-199 contains the following items: chicken fat, lard oil, neatsfood oil, animal stearine and tallow oil.

(2) Until 1963, this class #39-199 was imported largely as class #2293, Anumal Oil nop, consisting primarily of inedible grades of animal and chicken fats.

(3) In addition to the reported amounts, Canada imported 300 lbs of product valued at $2,000 from France in 1966.

Source: DBS, Trade of Canada.

TABLE 60

Canadian Exports of Animal Oils and Fats

(thousands of pounds)

Destination	1962	1963	1964	1965	1966
United Kingdom	289	228	553	332	430
Belgium/Luxembourg	–	(1)	(1)	–	–
Germany, West	1	1	2	–	–
Netherlands	–	438	–	–	–
Norway	–	–	–	–	32
Spain	–	844	–	–	–
Japan	925	551	–	915	–
Bermuda	–	(1)	–	–	–
Jamaica	6	27	–	46	16
Trinidad – Tobago	–	–	–	–	10
Leew.-Wind. Is.	–	(1)	–	–	–
Guiana	–	–	–	–	56
Cuba	66	(1)	–	–	–
United States	728	1,411	772	482	4,567
Italy	1,514	–	650	–	–
Colombia	36	–	–	–	–
Finland	–	–	41	–	–
Bahamas	–	–	1	–	–
Total	3,592	3,501	2,019	1,775	5,110
Total Value (thousands of $)	216	171	159	129	220

(1) Less than 500 lbs .

Source: DBS, Trade of Canada.

Comments to Table 61

As a result of increased coverage by the Dominion Bureau of Statistics, it is not possible to compare all this production data for 1966 with previous years. DBS is at present engaged in reorganising its method of collecting information on fats and oils production, and a great improvement in accuracy and reliability can be expected when all statistics for 1967 have been gathered.

Margarine production increased by 8.5 per cent to 181 million pounds in 1966, reversing the downward trend of recent years. In the United States, margarine consumption also reached a new peak of more than 10 pounds per capita and about twice the per capita butter consumption. Canadian per capita margarine consumption in 1966 was 8.9 pounds and 16.6 pounds for butter. Butter production declined by 5 per cent from 352 million pounds in 1965 to 334 million pounds in 1966.

Packaged shortening consumption remained at 50 million pounds in 1966, while bulk shortening consumption seemed to have risen to 203 million pounds. It is likely that previous to 1966 the figures did not include total Canadian production.

Salad and cooking oil production also seems to have grown significantly in 1966 to 128 million pounds from 75 million pounds in 1965. Again, the new procedure of data collection may have been more accurate.

Lard production dropped as a result of smaller slaughter volume.

TABLE 61

Canadian Production of Specified Oils & Fats Products

(Millions of Pounds)

	1962	1963	1964	1965	1966
Margarine	187	172	175	167	181
Creamery Butter	362	352	352	352	334
Shortening					
Package	52	54	54	51	50
Bulk	129	130	139	140	203(1)
Refined Oils					
Coconut	20	17	15	15	(2)
Salad & Cooking	69	78	72	74	128
Lard	99	100	108	97	86
Tallow					
Edible	37	42	50	50	48
Inedible	164	174	199	204	194
Grease, other than white	5	5	6	5	3
Other fats and oils(3)	6	8	8	7	10

(1) Packages over 20 pounds in 1966.

(2) Included with shortening oils starting in 1966.

(3) Includes white grease, neatsfoot oil, oleo oil, oleo stearine, oleo stock, etc.

Source: DBS, No 32-006

Comments to Tables 62 and 63

Similar to the comments made under Table 61, the new data collection procedure of DBS included more companies and 1966 figures cannot be compared with those of previous years.

However, a significant reduction in the volume of soybean oil used in margarine manufacture has become apparent, while at the same time the use of "other oils" has increased. "Other oils" include particularly rape seed oil. According to Table 63, more than 102 million pounds of rapeseed oil were used in the various finished products in 1966. It is safe to assume that more than 30 million pounds each were used in the manufacture of margarine and salad and cooking oils, apart from the 37 million pounds consumed in the production of shortening.

The significant aspect of the consumption of refined oils in margarine and shortening, Table 62, was the increased use of vegetable oils, while animal and marine oil consumption underwent only minor changes. As can be seen from Tables 1, 2 and 3 Canadian imports of vegetable oils increased at a similar rate, without any change in exports. Domestic production of vegetable oils increased too. Consequently, it may be concluded that per capita visible fats and oils consumption increased significantly by at least two pounds in 1966. Data published by USDA concerning American fats and oils consumption also indicate an increase of about three pounds.

TABLE 62

Canadian Consumption of Refined Oils and Fats in Margarine & Shortening

(thousands of pounds)

	1962	1963	1964	1965	1966(1)
Margarine					
Vegetable Oils					
Coconut	13,353	3,543	822	336	(2)
Cottonseed	3,115	2,839	3,580	3,581	(2)
Palm	13,241(3)	6,178	5,665	6,400	(2)
Soybean	55,192	46,933	81,070	67,196	57,514
Other (4)	11,814	12,652	15,079	20,500	52,753
Total	96,715	72,145	106,216	98,013	110,267
Marine Oils	48,293	64,555	29,734	30,026	(5)
Animal Oils					
Lard	7,470	1,733	5,953	7,902	(2)
Edible Tallow	(6)	(6)	20	–	(2)
Other	45	10	–	–	(2)
Total	7,515	1,743	5,973	7,902	(5)
Grand Total	152,523	138,443	141,923	135,941	145,964
Shortening					
Vegetable Oils					
Coconut	2,238	2,347	2,660	2,590	(2)
Cottonseed	7,448	7,264	9,205	12,138	(2)
Palm	19,033(3)	12,911	9,853	9,414	15,435
Soybean	52,180	55,324	62,596	59,685	64,559
Other (4)	21,151	24,392	23,661	25,702	88,458
Total	102,050	102,238	107,975	109,529	168,452
Marine Oils	21,553	22,855	13,486	14,726	(5)
Animal Oils					
Lard	24,367	23,206	27,198	23,536	(2)
Edible Tallow	30,415	33,322	42,813	42,348	(2)
Other	3,222	2,937	1,281	1,236	(2)
Total	58,004	59,465	71,292	67,120	(5)
Grand Total	181,607	184,558	192,753	191,375	252,897

(1) DBS coverage included more firms than in previous years, and figures can be compared with previous years to limited extent only. See Table 63.

(2) Confidential

(3) Includes palm kernel oil in 1962.

(4) Includes corn oil, palm kernel oil, peanut oil, rapeseed oil, sunflower seed oil and blends until 1965, and all vegetable oils except for soybean oil in 1966.

(5) A total of 48.4 million pounds of marine oils and 71.8 million pounds of animal fats were used in margarine and shortening manufacture in 1966.

(6) Included in "other".

Source: DBS No. 32-006

TABLE 63

Refined Fats and Oils Used in the Production of Packaged Margarine, Shortening, Salad and Cooking Oils in 1966

	Margarine (packaged only)	Shortening and shortening oils	Salad and cooking oils	Total
		(thousands of pounds)		
Vegetable oils:				
Coconut	(1)	(1)	(1)	24,152
Corn	(1)	(1)	(1)	27,533
Cottonseed	(1)	(1)	(1)	28,698
Palm	(1)	15,435	(1)	22,333
Palm kernel	–	(1)	–	8,260
Peanut	(1)	(1)	(1)	15,457
Rapeseed	(1)	37,453	(1)	102,331
Soyabean	57,514	64,559	30,024	152,097
Sunflowerseed	(1)	(1)	(1)	15,030
Other (including blends)	(1)	(1)	(1)	9,859
Total vegetable oils	110,267	168,452	127,031	405,750
Marine oils:	(1)	(1)	(2)	48,391
Animal oils:				
Lard	(1)	(1)	–	25,467
Oleo stearin	–	(1)	–	(1)
Tallow – Edible	(1)	(1)	–	44,958
Other	–	(1)	–	(1)
Total animal oils	(1)	(1)	–	71,751
Total consumption in manufacturing	145,964	252,897	127,031	525,892

(1) Confidential.

(2) Very small amount included with "Shortening".

Source: DBS No. 32006

Table 64

Canadian Imports of Margarine and Shortening

(thousands of pounds)

Country of Origin	1963	1964	1965	1966
United Kingdom	438	60	112	–
Sweden	144	264	156	180
United States	3,864	4,804	3,258	4,316
Germany, West	1	–	–	–
Total	4,447	5,129	3,526	4,496
Total Value (thousands of $)	805	910	721	935

Source: DBS, Trade of Canada.

TABLE 65

Canadian Exports of Margarine, Shortening & Lard(1)

(thousands of pounds)

Destination	1962	1963	1964	1965	1966
United Kingdom	–	0.3	–	0.9	–
Netherlands	–	3.6	8.4	14.3	16.0
Cuba	–	44.6	–	0.4	–
Bahamas	0.3	1.7	1.0	–	–
Bermuda	23.5	37.3	43.1	68.2	55.4
St. Pierre	3.0	14.3	32.7	48.3	91.2
Barbados	0.7	0.7	–	–	–
Jamaica	0.6	15.8	14.3	11.0	–
United States	2.5	2.6	4.4	4.0	5.1
Leew.-Wind. Is.	–	–	0.4	–	–
Norway	–	–	–	0.2	–
Japan	–	–	–	21.0	59.7
Total	30.6	120.9	104.3	168.3	228.0
Total Value (thousands of $)	7	30	27	42	61

(1) Includes lard starting in 1966.

Source: DBS, Trade of Canada.

TABLE 66

Canadian Trends in Butter Fat Production and Utilization

(millions of pounds)

	Total Milk Production		Butter Fat Utilization			
	Fluid Milk	Butter Fat Equivalent(1)	Manufactured Dairy Products(2)	Fluid Milk Sales(3)	Farm Home Consumed	Fed on Farms
1962.......	18,382	643	405	174	33	31
1963.......	18,432	645	406	176	33	30
1964.......	18,505	647	407	179	32	29
1965.......	18,360	642	402	182	31	27
1966.......	18,375	643	404	184	30	25

Butter Fat Utilization in Manufactured Dairy Products(4)

	Total	Creamery Butter	Cheese(5)	Concentrated Whole Milk Products	Ice Cream Mix
1962.......	399	296	50	33	19
1963.......	400	288	60	35	17
1964.......	403	288	56	35	17
1965.......	399	276	69	35	19
1966.......	401	274	74	30	22

Source: Based on DBS data.

(1) Fat content of milk based on conversion rate of 3.5

(2) Includes creamery butter, cheddar cheese, other cheese, concentrated whole milk products, ice cream mix and also a relatively small volume of farm butter.

(3) Fluid sales represent whole milk sales from farms for use in cream and milk.

(4) Farm butter excluded.

(5) Includes mainly cheddar cheese, and also other cheese made from whole milk and cream, but excludes creamed cottage cheese.

Comments to Table 66

In order to assess the position of dairy fat within the pattern of Canadian fats and oils consumption, trends in the butter fat production and utilization on a fat basis have been examined. Table 66 shows that milk output, and therefore also milk fat, production has been very stable for the past 5 years. With regard to utilization, Manufactured Dairy Products account for over 60% of butter fat consumption and also showed no change during the past 5 years. However, the breakdown of this category shows a 7.5% reduction in butter production between 1962 and 1966, amounting to a drop of 22 million pounds as butterfat. On the other hand, cheese production has grown by 49% during this period, utilizing an additional 24 million pounds of butterfat.

The only other areas showing an increase in butterfat consumption are Fluid Milk Sales, where the increase is nearly in line with population growth, and Ice Cream Mix production, where the growth exceeds the population expansion.

TABLE 67

Canadian Imports of Vegetable Cooking Fats and Packaged Salad Oils

(thousands of pounds)

Country of Origin	1964	1965	1966
United Kingdom	561	694	480
Sweden	78	111	127
Hong Kong	–	–	–
United States	3,503	8,448	7,107
Total	4,143	9,254	7,714
Total value (thousands of $)	992	2,517	2,050
Average price, cents per pound	23.9	27.2	26.6

Source: DBS, Trade of Canada.

This class was established in 1964 as #39385 and includes vegetable cooking fats and packaged salad oils, a group called lard substitutes, but not shortenings.

TABLE 68

Canadian Production of Salad Dressings and Mayonnaise

(millions of pounds)

	1961	1962	1963	1964	1965	1966
1st Quarter	8.8	9.3	10.0	10.6	13.0	12.7
2nd Quarter	13.9	14.3	16.4	17.3	17.2	19.7
3rd Quarter	8.8	10.0	9.1	9.1	10.9	14.7
4th Quarter	6.6	7.0	8.1	9.0	9.8	10.5
Total	38.1	40.6	43.6	46.0	50.8	57.7

Source: DBS No. 32-018, and 32-007 prior to 1962.

TABLE 69

Canadian Production of Sandwich Spreads(1)

(thousands of pounds)

	1961	1962	1963	1964	1965	1966
1st Quarter	947	918	1,138	981	1,173	1,661
2nd Quarter	1,012	1,230	1,147	1,391	1,332	1,376
3rd Quarter	971	922	780	1,024	1,077	1,260
4th Quarter	947	844	998	1,023	988	1,283
Total	3,877	3,914	4,063	4,418	4,570	5,581

Source: DBS No. 32-018, and 32-007 prior to 1962.

(1) Excluding meat and poultry paste.

TABLE 70

Canadian Production of Peanut Butter

(millions of pounds)

	1961	1962	1963	1964	1965	1966
1st Quarter	10.6	10.1	10.5	12.0	12.9	13.0
2nd Quarter	9.7	10.7	10.0	11.7	10.5	11.9
3rd Quarter	8.7	8.8	10.3	11.1	11.1	10.0
4th Quarter	8.6	9.4	8.6	10.4	11.1	11.2
Total	37.6	39.0	39.4	45.2	45.5	46.2

Source: DBS No. 32-018, and No. 32-007 prior to 1962.

TABLE 71

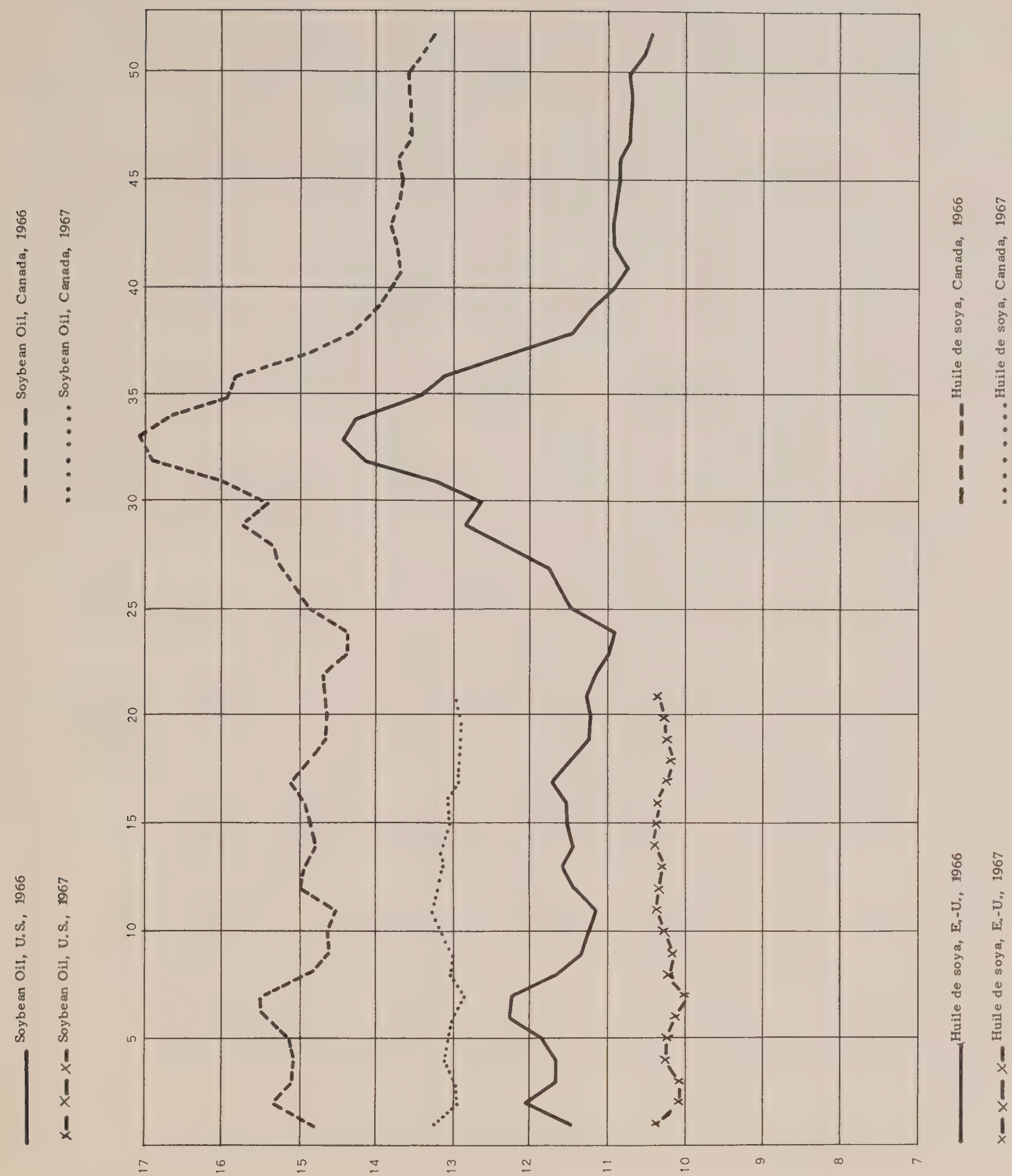
Average Retail Prices for Canada for Certain Fats (Cents)

1962 – 1966

	1962	1963	1964	1965	1966	Jan.*	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Margarine, lb.	29.6	28.0	29.3	33.9	36.0	34.5	34.9	35.1	35.7	36.0	36.0	36.3	36.4	36.2	36.7	37.1	37.0
Shortening, lb.	34.9	34.6	35.9	38.7	40.9	40.0	40.3	40.7	41.0	40.6	40.8	41.0	41.0	41.2	41.7	41.4	41.2
Lard, pure, lb.	22.5	22.8	23.7	27.2	30.1	29.4	29.8	30.5	30.8	30.8	30.2	29.9	29.7	29.7	30.0	30.2	30.0
Salad Dressing Jar, 16 oz.	42.6	42.6	42.6	44.0	44.4	44.5	44.6	44.3	44.3	44.6	44.3	44.5	44.5	44.5	44.3	44.3	44.6
Butter, creamery, first grade, 1 lb.	62.1	58.5	58.9	61.4	67.1	62.8	65.3	65.3	67.1	67.5	67.2	67.3	67.5	67.3	69.4	69.1	69.0

Source: DBS, Prices & Price Indexes, No. 62-002.

* The months cover the year 1966.



Soybean Oil, U.S., 1966
Soybean Oil, U.S., 1967
Soybean Oil, Canada, 1966
Soybean Oil, Canada, 1967
Huile de soya, E.-U., 1966
Huile de soya, E.-U., 1967
Huile de soya, Canada, 1966
Huile de soya, Canada, 1967
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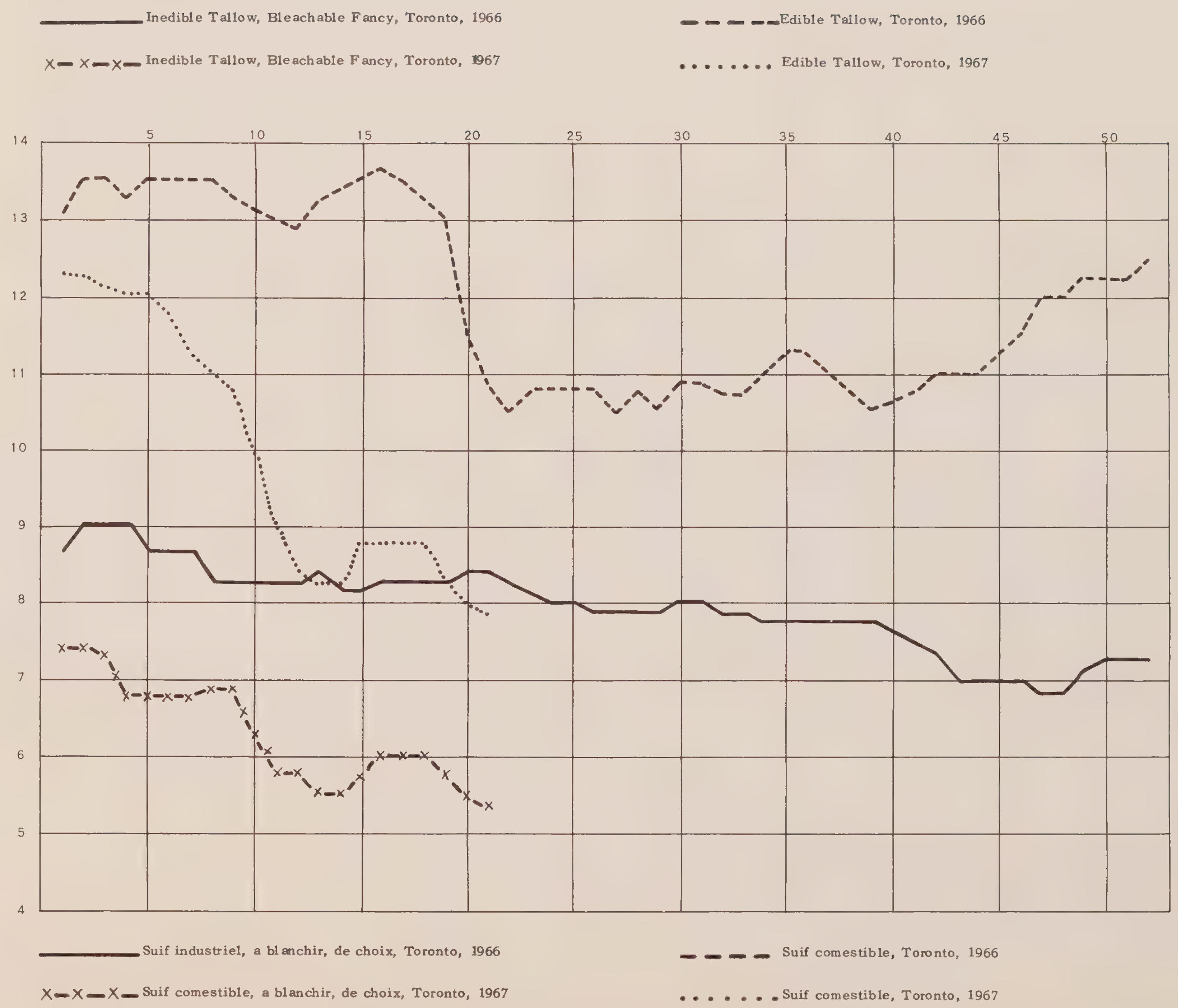
Inedible Tallow, Bleachable Fancy, Toronto, 1966
Edible Tallow, Toronto, 1966
Inedible Tallow, Bleachable Fancy, Toronto, 1967
Edible Tallow, Toronto, 1967
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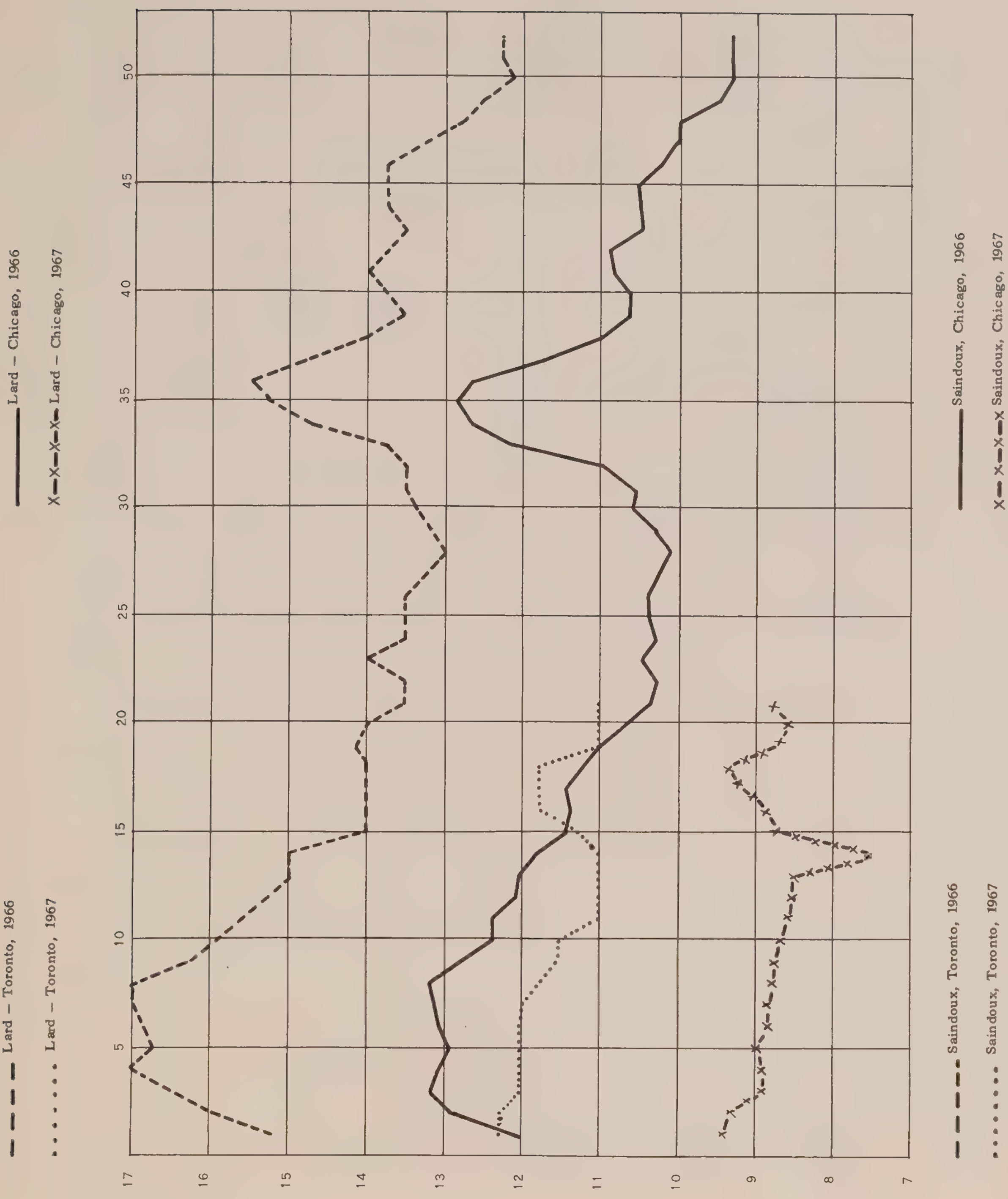
Suif industriel, a blanchir, de choix, Toronto, 1966
Suif comestible, Toronto, 1966
Suif comestible, a blanchir, de choix, Toronto, 1967
Suif comestible, Toronto, 1967



Lard – Chicago, 1966
Lard – Chicago, 1967
Lard – Toronto, 1966
Lard – Toronto, 1967
Saindoux, Chicago, 1966
Saindoux, Chicago, 1967
Saindoux, Toronto, 1966
Saindoux, Toronto, 1967
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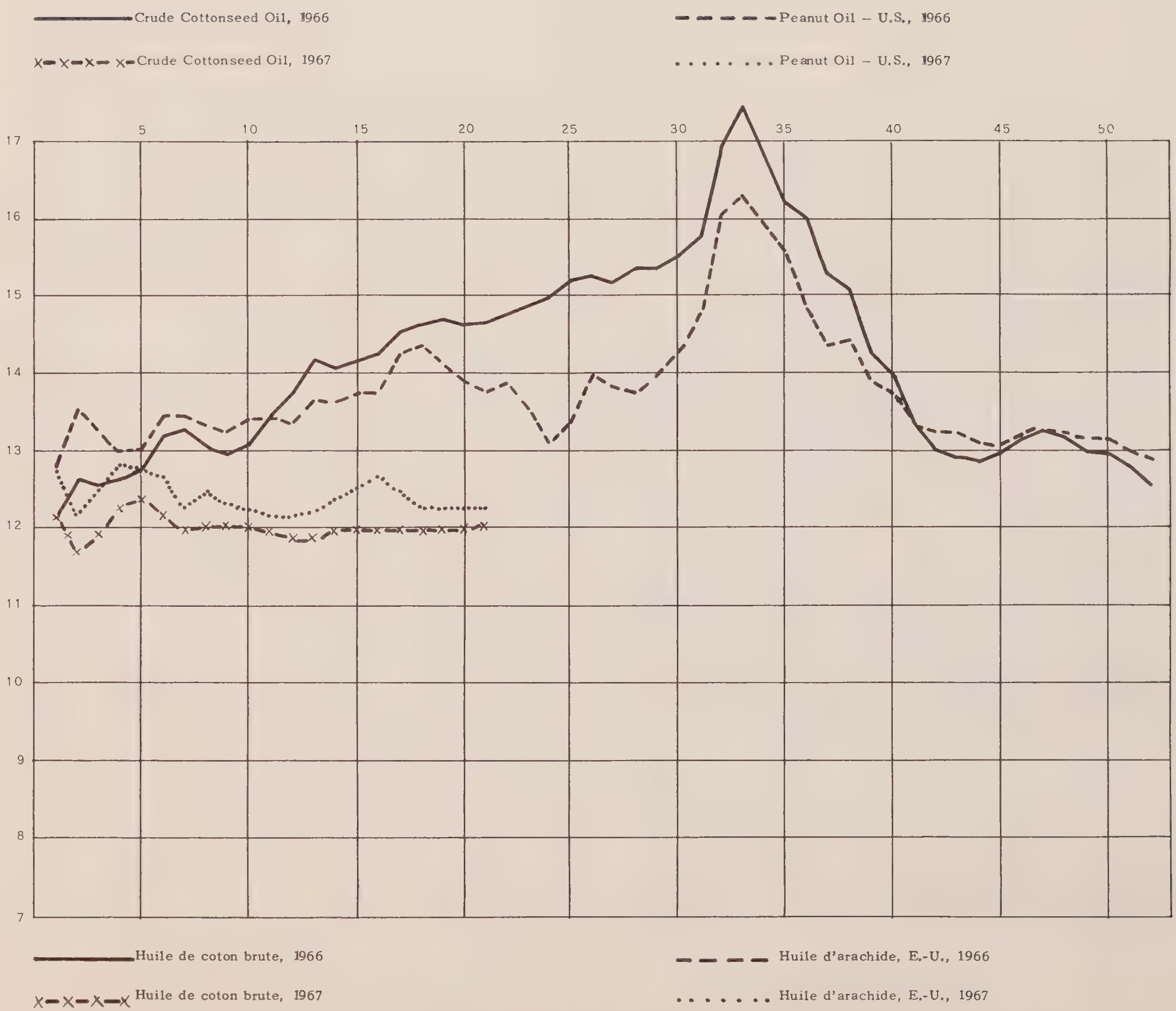
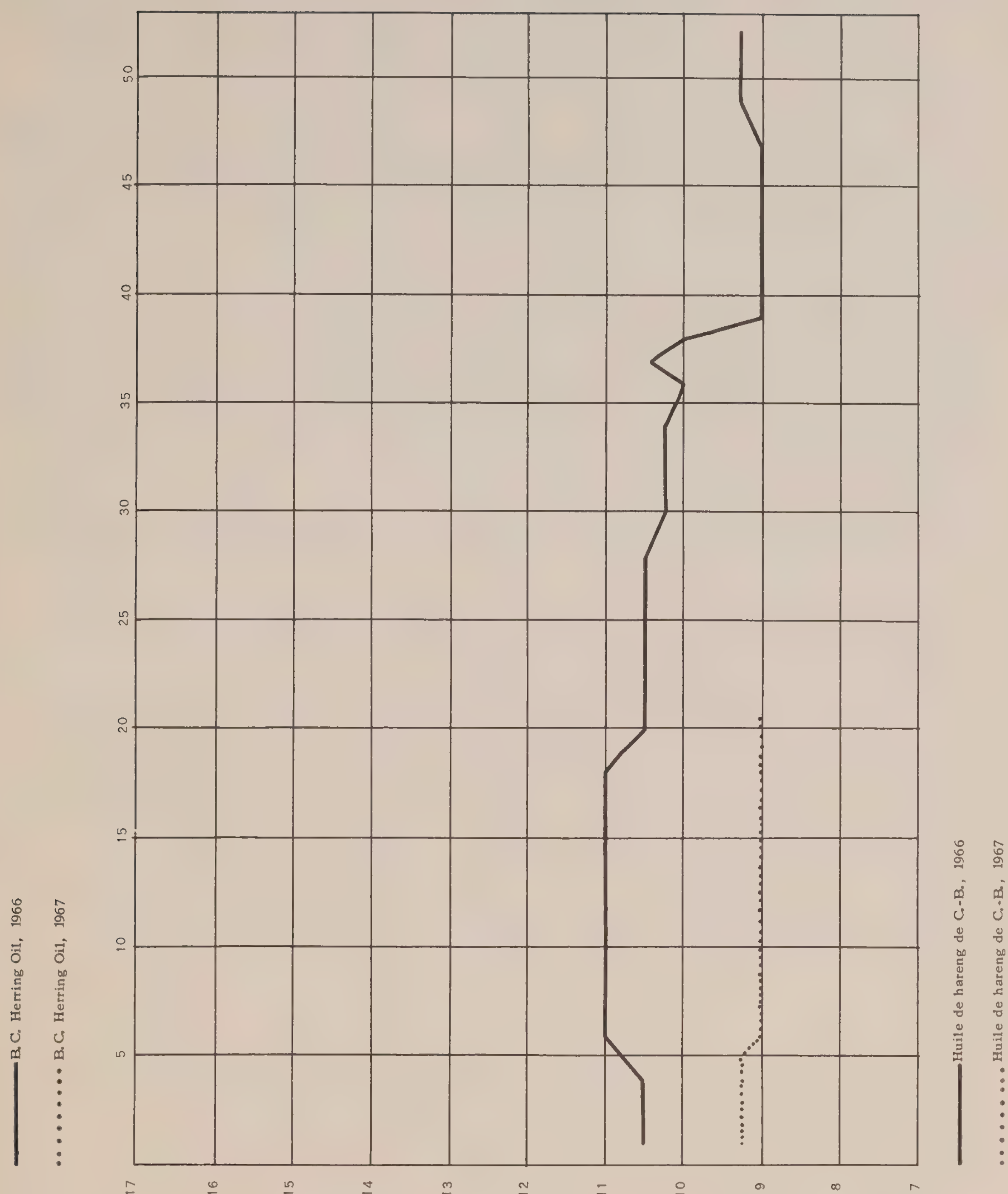


Crude Cottonseed Oil, 1966
Crude Cottonseed Oil, 1967
Peanut Oil – U.S., 1966
Peanut Oil – U.S., 1967
5 10 15 20 25 30 35 40 45 50
17 16 15 14 13 12 11 10 9 8 7
Huile de coton brute, 1966
Huile de coton brute, 1967
Huile d'arachide, E.-U., 1966
Huile d'arachide, E.-U., 1967


B.C. Herring Oil, 1966
B.C. Herring Oil, 1967
Huile de hareng de C.-B., 1966
Huile de hareng de C.-B., 1967
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NEW RECOMMENDATIONS REGARDING CANADIAN OILSEED CROPS

Sixth Report of the House of Commons
Standing Committee on Agriculture,
Forestry and Rural Development.

Mr. E. F. Whelan, M. P., presented the Sixth Report of the Standing Committee on Agriculture, Forestry and Rural Development to the House of Commons on May 8, 1967.

The following recommendations are of particular concern to the producers of oilseed as well as to the processing industries.

Jurisdiction of the Canadian Wheat Board

Evidence suggested that the jurisdiction of the Canadian Wheat Board should be extended so as to allow the Board to handle the marketing of rye, flax and rapeseed. This proposition would appear to have general support throughout the West. The Canadian Wheat Board, when it appeared before the Committee, pointed out that if the Board were to assume marketing responsibility for rye, flax and rapeseed an amendment to the Canadian Wheat Board Act would be required. The Board also stated that if such an amendment were passed that it was confident that it could handle the added responsibility.

Your Committee understood, however, that a very different type of marketing operation would be necessary to handle the marketing of flax and rapeseed. If the marketing powers of the Board were extended to cover flax and rapeseed it would, in effect, involve the establishment of a completely new operation within the Board.

After due consideration of the representations made, the Committee feels that an extension of the Wheat Board jurisdiction into this area could be beneficial for the producer.

This opinion has been reached for the following reasons. First, the Canadian Wheat Board now regulates the delivery of rye, flax and rapeseed to country elevators and because of this the producer is frequently not able to act quickly enough to take advantage of the changing market prices. Second, a single well-established selling agency would insure uniform delivery arrangements and give the Canadian producer the considerable marketing experience of the Canadian Wheat Board. Third, Canadian Wheat Board control would in all likelihood encourage diversity of prairie grain production, something that should in the long run prove very healthy for the grain industry.

Your committee therefore recommends that legislation be introduced, after the usual procedures have been complied with, that would extend the jurisdiction of the Canadian Wheat Board so that it would be the sole Canadian marketing agency for rye, flax and rapeseed.

Oilseeds

Your committee had impressed upon it, by one of its members and many witnesses, the importance of rapeseed. Rapeseed is one crop that grows better in Western Canada than in any other part of the world. However, if any greater amount were grown in Canada it is very likely that prices would be drastically affected unless the total market were enlarged.

It is your committee's view that domestic oilseeds could be used more extensively as a primary oil in Canada. If this were to happen, more rapeseed could be grown on the prairies and fewer Canadian dollars would leave Canada to import corn and soybean oil.

It is your committee's recommendation that the Oilseed Institute be urged to initiate additional research on rapeseed and that the institute be encouraged to promote the production and marketing of rapeseed and its by-products.

KENNEDY ROUND RESULTS

Trade Minister Robert Winters and Finance Minister Sharp released details of the trade agreements reached under the Kennedy Round of GATT negotiations signed in Geneva on June 30, 1967.

Below are listed tariffs and tariff changes of interest to Canada's fats and oils and oilseed meal industries:

a) The Canadian concessions regarding Most Favored Nation tariffs are of greatest importance. Since the "General Tariffs" are of negligible significance to this industry, and since British Preferential Tariffs are free, these have not been included. It will be noted that the recommendations made in the Report by the Tariff Board, Reference No. 131, in 1963, have now been adopted. Crude oils, including rapeseed oil, will in most cases enter Canada at a 10% rate, and a rate of 17.5% will apply to most refined oils.

b) The United Kingdom will gradually eliminate the NFN duty of 5% on sybeans and reduce the rate on soybean meal from 15% to 10%. The duty on soybean oil will not be changed. Consequently Canadian beans will lose their advantage, while the oil and meal will remain protected.

c) A significant aspect of the Japanese concessions is the reduction of the duty on soybeans from 13% to 2 yen 40 sen per kg, while the rate on rapeseed will remain at 6 yen 10 sen per kg. Safflower seed duty also was reduced by 50% from 5% to 2.5%.

d) The United States did not change the $6 per ton duty on soybean meal. The duty on linseed meal was reduced from 1/4 cent per pound to 1/8 cent.

CANADIAN TARIFF CONCESSIONS

(Most Favored Nation)

Tariff Item Number	Description	Base	Concession
1300–1	Lard and animal stearine of all kinds n.o.p. (per lb.)	1.75¢	1 ¢
1305–1	Lard compound and similar substances n.o.p. (per lb.)	1.75¢	1 ¢
1400–1	Tallow	17.5 %	10 %
2005–1	Butter produced from the cocoa bean (per lb.)	2.25¢	Free
2010–1	Illipe butter	10 %	Free
2015–1	Shea butter	10 %	Free
13300–2	Fish solubles	17.5 %	Free
25800–1	Linseed and flaxseed oil, raw or boiled (per lb.)	1.55¢	10 %
25805–1	Linseed and flaxseed oil, other than raw or boiled	20 %	17.5%(1)
25900–1	Lard oil and neat's foot oil	22.5 %	17.5%
25915–1	Castor oil, crude	Free	Free (1)
26505–1	Fish oils, n.o.p.	20 %	15 %
26505–2	Menhaden oil	17.5 %	15 %
26515–1	Halibut liver oil, crude or refined	20 %	15 %
26605–1	Tung or china wood oil	Free	Free
27600–1	Mustardseed	7.5 %	Free(1)
27605–1	Rapeseed	7.5 %	Free(1)
27610–1	Sesameseed	2.5 %	Free(1)
27615–1	Sunflowerseed	5 %	Free(1)
	Oilcake and Oilcake meal – including pellets or other shapes:		
27701–1	Cottonseed	Free	Free(1)
27702–1	Linseed	Free	Free(1)
27703–1	Peanut	5 %	Free(1)
27704–1	Soybean	Free	Free(1)
27705–1	All other, of vegetable origin	Free	Free(1)
	Vegetable oils, crude or crude degummed:		
27711–1	Cocoanut	10 %	10 %(1)
27712–1	Corn	20 %	10 %(1)
27713–1	Cottonseed	10 %	10 %(1)
27714–1	Palm	10 %	10 %(1)
27715–1	Palm Kernel	10 %	10 %(1)
27716–1	Peanut	10 %	10 %(1)
27717–1	Rapeseed	Free	10 %(1)
27718–1	Soybean	20 %	10 %(1)
27719–1	Sunflowerseed	10 %	10 %(1)

Vegetable oils, other than crude or degummed:

27731–1	Cocoanut	17.5 %	17.5%(1)
27732–1	Corn	20 %	17.5%(1)
27733–1	Cottonseed	17.5 %	17.5%(1)
27734–1	Palm	20 %	17.5%(1)
27735–1	Palm Kernel	20 %	17.5%(1)
27736–1	Peanut	20 %	17.5%(1)
27737–1	Rapeseed	Free	17.5%(1)
27738–1	Soybean	20 %	17.5%(1)
27739–1	Sunflowerseed	10 %	17.5%(1)
27740–1	All other, n.o.p. and mixtures of vegetable oil n.o.p.	20 %	17.5%(1)
27800–1	Soybean oil for use in the manufacture of paint and varnishes	Free	Free(1)
27805–1	Vegetable oils for use in canning fish	Free	Free(1)
27810–1	Olive oil	Free	Free(1)
27815–1	Cashew nut shell oil	Free	Free(1)
27820–1	Soapstocks of vegetable origin with a moisture content of 50% or more by weight, and acid oils of vegetable origin with a free fatty acid content of less than 90% by weight	–	10 %(1)
66335–1	Fish meal	20 %	10 %
93805–1	Tall oil	Free	15 %(1)

(1) – These changes are to be implemented in a single step, i.e. the final rate of duty will be put into effect not later than July 1, 1968. Others will be staged over a period not exceeding four years beginning January 1, 1968. The difference between the base rate and the final rate will be reduced by not less than one-fifth on January 1 of each year starting January 1, 1968.

UNITED KINGDOM TARIFF CONCESSIONS

(Most Favored Nation)

	Base	Concessions
Soybeans	5%	Free(2)
Soybean meal	15%	10%(2)
Soybean oil	15%	No change

(2) The tariff on soybeans will be reduced as follows.

July 1, 1968	40% reduction
January 1, 1970	20% reduction
January 1, 1971	20% reduction
January 1, 1972	20% reduction

United States

	Linseed Meal (per lb.)	0.25 ¢	0.12¢
161.61	Mustard Seed (per lb.)	0.875¢	0.43¢
	Soya meal (per lb.)	.34 ¢	no change
175.51	Sunflower seed (per lb.)	0.8 ¢	0.4 ¢
177.56	Tallow (per lb.)	0.875¢	0.43¢

European Economic Community

15.02a	Tallow	2%	Free

Japan

12.01	Oilseeds and oleaginous fruit, whole or broken		
12.01–1	Soybeans	13%	2 yen 40 sen/kg.
12.01–2	Ground nuts: for oil extraction	20% or 14 yen/kg.	Free
12–3	Rapeseed and Mustard seed	6 yen 10 sen/kg.	no concession
12–7	Safflower seeds	5%	2.5%
15.02	Unrendered fats of cattle, sheep or goats; tallow (Including "premier jus") produced from those fats:		
15.02–1	Beef tallow	4%	2.5%
15.02–1	Other	5%	2.5%
15.03	Lard stearin, oleostearin and tallow stearin; lard oil, oleo oil and tallow oil, not emulsified or mixed or prepared in any way.	15%	7.5%
15.04	Fats and oils of fish and marine mammals, whether or not refined:		
15.04–2	Whale oil	Free	Free
15.04–3	Liver oil	10%	5 %
15.04–4	Other	10%	5 %
15.07	Fixed vegetable oil: fluid or solid, crude refined or purified:		

15.07–1	Soybean oil	28 yen/kg.	no change
15.08	Animal and vegetable oils, boiled, oxidized dehydrates, sulfonated, blown or polymerized by heat in vacuum or in inert gas; or otherwise modified.	15%	7.5%
15.12	Animal or vegetable oils and fats, wholly or partly hydrogenized, or solidified or hardened by any other process, whether or not refined, but not further processed	15%	7.5%
15.14	Spermaceti, crude, pressed or refined, whether or not colored	15%	7.5%
38.05–1	Tall oil, crude	5%	2.5%

SELECTIVE HYDROGENATION OF FATTY OILS

The Canadian Patent Office Record of May 16, 1967 announced the issuing of a patent on the Selective Hydrogenation of Fatty Oils, number 759,051 to –

Albert de Jonge, Vlaardingen, Holland, and Jacob Erkelens, Dordrecht, Holland.
Granted to Unilever Limited, Port Sunlight, County of Chester, England.
Application August 10, 1965, Serial No. 937,783.
In Great Britain August 12, 1964 (32,778/64)
17 claims – class 260-409
No drawing.

1. A process for selectively hydrogenating oils containing linoleic acid in addition to more highly unsaturated fatty acids, so as to obtain improved keeping properties, wherein the oils are hydrogenated at a temperature of 150° to 225° C in the presence of a hydrogenation catalyst in which the active material is composed of copper to the extent of at least 70% by weight, in structural combination with a metal which is more highly active than copper, present to an extent sufficient to increase substantially the rate of hydrogenation, until the content of the more highly unsaturated fatty acids has been reduced while retaining at least 40% of the original content of linoleic acid, after which the hydrogenated oil is substantially freed from traces of catalyst.

12. Process according to claim 1 or 3, wherein the oil treated is earth-bleached soybean oil substantially free from phosphatides and containing not more than 0.8% of free fatty acid and not more than 0.4% by weight of moisture.

Fat Compositions and Their Preparation

The Canadian Patent Office Record of June 13, 1967 reported a new patent number 760,933, "Fat Compositions and Their Preparation", A. J. Haighton and A. Mijnders, V.E. Vlaardingen, Holland. Granted to Unilever Limited, Port Sunlight, County of Chester, England. Application July 13, 1963, Serial No. 880,088. In Great Britain July 16, 1962 (27 187/62)

9 Claims – Class 99-165

Patent describes process for preparing a liquid shortening, wherein a fat mixture having a solids content at 20°C of 5 to 35 % is converted from the molten condition to a slurry. The slurry is gradually cooled and comminuted, so that none of the particles has a dimension exceeding 15 microns.

FOREIGN INDUSTRIES REVIEW

United States Soybean Outlook

Soybean oil became the largest component of the world fats and oils production in 1966 with an estimated volume of 4,960,000 tons. Butter fat had previously been the leader, and now took second place with 4,660,000 tons. Thus soybean oil accounted for 13.1% of the total estimated world production of 37,683,000 tons (Table 4).

A further increase of soybean oil production to 5,380,000 tons is forecast for 1967, i.e. an increase of 420,000 tons. Sunflowerseed oil production is also expected to increase significantly from 2,795,000 tons to 3,100,000 tons. The expected increase in rapeseed oil production, largely as a result of increased plantings in E.C.C. countries, will amount to less than 100,000 tons, from 1,490,000 tons to 1,585,000 tons. No significant changes are expected in 1967 in the production of animal fats, marine and industrial oils. Consequently the growth in soybean oil production in the United States and of sunflowerseed oil production in the U.S.S.R. will primarily account for the estimated expansion of world production from 37.7 million tons in 1966 to 38.7 million tons in 1967.

It is estimated that the sum total of United States soybean crushings plus exports will be equivalent to 4,285,000 tons of soybean oil during the crop year 1966/67. On the basis of the expected soybean availabilities in the United States during the crop year 1967/68, the oil equivalent will reach approximately 10.7 billion pounds, i.e. 5,350,000 tons. By comparison, the oil potentially available from Canadian soybeans amounts to only about 85 million pounds.

Supply and Disposition of United States Soybeans

Item	Year beginning September			
	1964	1965	1966(1)	1967(2)
Supply & Disposition	Million bushels			
Supply				
Beginning Stocks, Sept. 1	67.3	29.7	35.6	100-110
Production	700.9	845.6	931.5	1,000(3)
Total Supply	768.2	875.3	967.1	
Disposition				
Crushings	479.0	537.5	550	
Exports	212.2	250.6	250-260	
Seed, Feed and Residual	47.3	51.5	57	
Total Disposition	738.5	839.6	857-867	
Ending Stocks, Aug. 31	29.7	35.6	100-110	
Acreage and Yield	Million Acres			
Acreage planted	31.6	35.2	37.4	40.6(3)
Acreage harvested for beans	30.8	34.4	36.6	
Percent harvested (%)	97.5	97.7	97.9	
Yield per acre harvested	22.8	24.5	25.4	
Price	Dollars			
Price per bushel				
Support	2.25	2.25	2.50	2.50
Received by farmers (wgt. avg.)	2.62	2.54	2.77	
No. 1, Yellow Chicago (simple avg.)	2.88	2.98	2.95	

(1) Preliminary

(2) Forecast

(3) March 1 planting intentions.

Source: USDA.

In 1965, 124 oilseed mills crushed soybeans in the United States. The number had been 193 mills in 1951 and 121 mills in 1959. In 1965 the estimated total processing capacity of these 124 mills amounted to about 600 million bushels. Nearly 538 million bushels were crushed in 1965/66, utilizing about 90% of the capacity, i.e. somewhat more intensively than in most years. The average processing capacity per mill has increased from 1.6 million bushels (48,000 tons) annually in 1951 to 4.8 million bushels (144,000 tons) in 1965.

Soybean crushings during September to May 1966/67, totalled 413 million bushels, about three million bushels more than the year before. The relatively high price of soybeans, compared with product values, has reduced processing margins (the nine-month average of spot prices was 16 cents per bushel, compared with the relatively wide margin of 30 cents a year earlier) and thereby restrained the crush. The industry has operated at about 80% of its estimated crushing capacity.

The soybean crushing rate during June to August is expected to pick up from a year earlier levels, as total requirements for soybean oil and meal increase and supplies of competitive fats and oils and oilseed meals are seasonally reduced. Accordingly, USDA expects crushing for the entire 1966/67 marketing year to total around 550 million bushels, compared with 538 million bushels in 1965/66. The average processing capacity per mill has increased from 1.6 million bushels (48,000 tons) annually in 1951 to 4.8 million bushels (144,000) tons in 1965.

Comparison of Soybean Prices With Market Value of Soybean Oil and Meal

A statistical comparison of this kind does not reflect actual operating margins, since the prices are simple averages, without taking into account location differentials, actual purchases and sales of soybeans, soybean oil or meal, lecithin production, etc. However, a long-term favorable relationship between raw material costs and product prices is essential to the success of the crushing industry.

	Unit of Value	May 1967(1)	April 1967	March 1967	May 1966
Soybean Oil:					
Average price at crushing plant.....	Cents per pound	10.2	10.3	10.3	11.3
Value from bushel of soybeans(2)...	Dollars	1.09	1.10	1.10	1.21
Soybean Meal (44%):					
Bulk price at Decatur	Dollars per ton	73.40	74.50	76.60	80.30
Value from bushel of soybeans(2)...	Dollars	1.74	1.77	1.82	1.90
Value of oil and meal from bushel of soybeans(2)..................	Dollars	2.83	2.87	2.92	3.11
Marketing price of No. 1 yellow soybeans at Illinois points	Dollars per bushel	2.79	2.80	2.82	3.03
Spread between soybean price and value of oil and meal	Cents	4	7	10	8

(1) Preliminary

(2) Based on assumption that a bushel of soybeans yields 10.7 pounds of oil and 47.5 pounds of meal for crop year 1965/66.

Source: Merrill, Lynch, etc. and USDA.

These statistical data do show the price trends which have characterized developments in the soybean industry in the United States during the past year. Soybean prices have dropped less than product prices. American farmers have tended to hold soybeans or to place them under government support. Through May 31, 1967, about 150 million bushels on the 1966 crop were under price support loans compared with 87 million a year ago. Repayments left a net loan entry of 94 million bushels at the end of May. USDA has announced a loan extension program (reseal), which could keep these soybeans off the market during the 1967/68 crop year.

Increased competition from relatively lower-priced fish meals, mainly from Peru and Norway, and Russian sunflowerseed oil, priced below soybean oil, reduced export demand for soybeans and meal.

Domestic use of soybean meal in the United States was not significantly different from last year. The main factors boosting domestic use this year are the sharp reduction in cottonseed meal supplies, and the increases in poultry, hogs and cattle on feed. Factors restraining oilseed meal usage this year have been the less favorable livestock feed price ratios, and imports of competitive fish meals, which totalled 313,000 tons (mainly from Peru and Chile) during October-April 1966/67 compared with 137,000 tons the previous year.

While at the present time the demand for soybean protein in animal nutrition continues to be the driving force behind the expansion of the soybean industry, the development of synthetic and fermentation products (amino acids, urea, etc.), challenges the structure of all industrial sectors. A recent report of Merrill, Lynch, Pierce, Fenner and Smith, Inc. summarizes the situation.

> "Our earlier report that the Japanese would reduce their import levies on soybeans by 50% has been confirmed by their finance ministry. The Japanese Diet is due to act on the measure in December. If approved, it would become effective in April 1968. As we understand the terms, the 50% reduction would take effect gradually over a 5-year period, and should increase the strength of the soybean's competitive position with respect to the other oilseeds. Soybean export inspections were 2.8 million bushels, bringing the total inspections for export since September 1st to 212.7 million bushels compared with 216.3 million a year earlier."

Soybean Oil

USDA estimates that soybean oil production in the United States will be close to 5.9 billion pounds in 1966/67, slightly higher than the 5.8 billion pounds produced in 1965/66. Total domestic use in 1966/67 is placed at about 4.7 billion pounds, about the same as the preceding year. Exports are expected to rise from 947 million pounds in 1965/66 to 1.2 billion pounds in 1966/67. This would leave a carryover of 0.4 billion pounds on October 1, 1967 compared with 0.5 billion pounds at the same date in 1966.

Exports will be composed largely of P.L. 480 shipments. Dollar exports dropped sharply this marketing year because of competition from Russia and East European sunflowerseed oil. Soybean oil exports for the five-month period October 1966 through February 1967 totaled 335 million pounds as compared with 397 million pounds the year before. Dollar exports accounted for 80 million pounds of this, and 255 million pounds, or more than 75% of the total were P.L. 480 shipments.

Soybean Oil: Supply and Disposition

(Year beginning October)
(Million pounds)

	1963	1964	1965	1966
Supply				
Stocks, Oct. 1	920	578	297	462
Production	4,822	5,146	5,800	5,850(1)
Total Supply	5,742	5,724	6,097	6,312(1)
Disposition				
Domestic Disappearance	4,058	4,069	4,688	4,750(1)
Exports & shipments	1,106	1,357	947	1,200(1)
Total Disposition	5,164	5,426	5,635	5,950(1)
Stocks, Sept. 30	578	297	462	362(1)

(1) Estimate

Soybean oil prices (crude, Decatur) have continued their downward drift throughout the first half of 1967. From a June-September 1966 level of 12.5 cents per pound, prices dropped to an October-May average of 10.5 cents and reached about 9.15 cents early in July. Soybean oil dropped to more than 2.5 cents per pound below cottonseed oil.

With the prospect of another large crop and continued pressure from sunflowerseed and rapeseed oil in markets outside the United States, a major rise in soybean oil prices cannot be expected.

Utilization of Soybean Oil in Various Products

(Year beginning October)
(Million pounds)

Year	Food					Non-Food					Total Domestic Disappearance
	Shortening	Margarine	Cooking & Salad oils	Other Edible	Total	Paint & Varnish	Resins & Plastics	Other Inedible (1)	Foots & Losses	Total	
1961	1,353	1,036	771	20	3,180	88	74	47	151	359	3,540
1962	1,222	1,069	933	15	3,239	90	78	54	163	385	3,624
1963	1,391	1,126	1,146	21	3,684	97	84	48	146	374	4,058
1964	1,404	1,107	1,105	32	3,648	94	95	66	165	420	4,069
1965	1,739	1,241	1,203	38	4,221	100	101	60	200	467	4,688

(1) Includes between four and six million pounds of oil used for other drying oil products than those listed.
Source: USDA.

The trend during the present crop year 1966-67 indicated a lower usage of soybean oil in shortenings and a replacement by lower-priced lard, inedible tallow and imported palm oils. However, general soybean oil usage is being boosted by a) the lower oil price, b) the cutback in cottonseed oil production, and c) the increases in population and consumer incomes.

During the crop year 1965/66, soybean oil accounted for 77% of all oil used in the manufacture of margarine, for 55.5% of all oils used in shortening manufacture, and for 44% of all oils in salad and cooking oils.

SOYBEAN MEAL

United States Soybean Meal: Supply and Disposition

(Year beginning October)
(Thousand short tons)

Item	1962	1963	1964	1965	1966(1)
Supply:					
Stocks, Oct. 1	94	155	122	106	132
Production	11,127	10,609	11,286	12,901	13,100
Total Supply	11,221	10,768	11,408	13,007	13,132
Disposition:					
Exports and Shipments	1,476	1,478	2,059	2,656	2,550
Feed	9,586	9,168	9,243	10,219	10,500
Ending stocks	159	122	106	132	
Total Disposition	11,221	10,768	11,408	13,007	–
	Dollars	Dollars	Dollars	Dollars	Dollars
Price per ton Bulk Decatur	71.30	71.00	70.20	81.50	–

(1) Estimate.
Source: USDA

Soybean meal production, domestic use and exports during the crop year 1966/67 are not expected to differ substantially from the situation in 1965/66. Fluctuation in livestock population and prices had given rise to expectations for both increases and decreases in demand.

Soybean meal prices in the first half of the crop year 1966/67 were considerably higher than those in 1965/66. The average difference ranged about $6 per ton. During the second half of the crop year, prices have been tending to be considerably lower than the year before. Soybean meal prices (44% protein, bulk, Decatur) declined from $82 per ton in October 1966 to $73 in May 1967.

In 1965, 13.3 million tons of all types of oilseed meals were consumed by the different animal classes, and soybean meal accounted for 10.2 million tons (77%) and cottonseed meal for 2.5 million tons (19%). The different animal classes shared the soybean meal consumption as follows:

Dairy cattle	15.0%
Beef Cattle	16.4%
Hogs	12.7%
Other livestock	6.5%
Total livestock	50.6%
Broilers	24.7%
Hens and pullets	13.7%
Other poultry	11.0%
Total poultry	49.4%

THE FUNCTION OF PUBLIC LAW 480 AND THE UNITED STATES SOYBEAN INDUSTRY

by
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Representatives of the United States soybean industry, soybean growers, and government officials are agreed that Public Law 480–; "The Food-for-Peace Program" – is good for them, good for the country and good for other countries throughout the world as well. Canada is considered by the United States to be among the beneficiaries.

PL 480 is an instrument for moving oil, the soybean industry's problem product, into new markets, through concessional sales, donations, and barter. The residual benefits of a steady and generous flow of 480 oil are many and various, in the United States view.

"Without 480, this oil would be going onto commercial world markets and depressing prices," says George L. Prichard, Washington representative of the National Soybean Processors Association. "The result of moving oil into human consumption where it is sorely needed, and the people otherwise could not have it, has been to improve the oil market in other producing and processing countries.

"This is no small factor, for example, in the expansion of rapeseed markets for Canada," Prichard goes on.

"Since the demand for fats and oils in the developed countries is inelastic, the movement of oil to people in the underdeveloped areas under 480 has been an important factor in meeting the expanding demand for soybean protein feeds both in the United States and abroad.

"Any increase in world utilisation of fats and oils," Prichard says, "is a help to all concerned."

The great virtue of Public Law 480 is the stimulus it gives to economic development of the receiving country, and, in turn, to commercial trade with the United States, and other countries, in the view of officials in the U.S. Department of Agriculture. They point out that Spain, Greece, Iran, Morocco, Pakistan, and Turkey are among the countries whose first imports of vegetable oil were through 480.

These countries, the officials add, are now buying at least some of their oil on the commercial market. Their dollar purchases of other United States farm products have increased substantially in recent years and they are active in world trade. In an analysis and assessment of the economic effects of 480 in Turkey, Professor Resat Aktan of the University of Ankara, director of the project, reported:

"Since 1955 the PL 480 program has supplied the great bulk of imported edible oils and has supplemented domestic production in order that the strong and expanding domestic demand for these products may be met... In part these supplies replace domestic animal fats, but the great bulk made possible the rapid expansion of margarine production and thus increased total consumption of vegetable oils. Here PL 480 operations directly contributed to a higher standard of living, changed the concumption pattern and indirectly freed foreign exchange for other commercial imports."

United States dollar sales of oils to Iran reached a total of 119 million pounds in 1964-65. Since then, Iran has continued to be a large buyer in the world market. Spain has become an important dollar

market for United States soybeans and soybean meal -- the result of initial shipments several years ago of soybean oil under the 480 program.

In answer to charges that the United States has "dumped" oil, trade and government officials ask the critics to consider the alternative.

"If the oil were not sold for foreign currencies under 480, and we let it go for what it brought," says Glenn Pogeler, president of the American Soybean Council, "this would disrupt present world markets, in our opinion, and hurt other oilseeds much more than soybeans which have a considerably lower oil content of only 20 % in comparison with about 35% of rapeseed, 45%-to-50% for sunflower of improved varieties, 50 %-to-60 % for shelled peanuts, and 65 % for copra."

United States officials believe that PL 480 has been an important factor in the emergence in recent years of North America -- the United States and Canada -- as the "breadbasket" of much of the rest of the world. "The expansion of world trade since 1960 has surpassed all expectations," observes Frank D. Barlow, Jr., a highly regarded economist in the U.S. Department of Agriculture.

"Soybeans and soybean products, of course, have had the most spectacular relative increase," Mr. Barlow continues. "Prewar trade was small and was largely accounted for by exports from China. Today, world net trade of soybeans is nearly 7 million tons, soybean oil is about 600,000 tons, and soybean meal about 2.5 million tons... United States exports of soybeans and soybean products, which were not even on the board prior to World War II, now account for 87% of world exports."

Prior to World War II, Mr Barlow points out, Latin America ranked first as a net exporter of farm products, followed by Eastern Europe, North America, Oceania, Asia, and Africa, in that order. "By 1966, North America was by far the major net exporting region of the world, accounting for some 85 % of the total."

Mr. Barlow believes that the immediate future growth in world agricultural trade will depend largely upon the United States and Canada, along with Australia, Argentina, South Africa, and other traditional exporting countries to meet the world's increasing demands for food and fiber.

The large increase in soybean imports, he notes, has been concentrated in the commercial markets of Western Europe and Canada where they have more than doubled since World War II. "Price movements of soybeans, meal, and oil have shown less stability since 1955 than those for other commodities – wheat, rice, and the feed grains. The general price declines in 1958-60 were followed by rising prices in 1961, which continue to show the growing strength of the foreign demand for meal over oil. As new highs are being reached in meal prices, oil prices have failed to reach mid-1950 levels."

But Mr Barlow feels that price is less important to trade expansion than is sometimes supposed. "In the case of soybeans, the growth in export volume has continued even though prices have been rising since 1960," he says. "Demand and other factors often have had more important effects on the volume of trade for most commodities than the level of price per se."

Assistance in developing the economies of other countries through such programs as 480 is a key to growth in future trade, Mr. Barlow thinks. "A recent study conducted by the USDA has shown that by helping to promote economic development, the Food-for-Peace Program also helped develop commercial markets for United States farm products."

Among countries that have been assisted, he points out, were Spain, Israel, Greece, and Taiwan. Commercial sales of United States farm products to these four nations increased from an average of $21 million during the 1955-60 period to an average of $180 million in 1963-65.

In the last 12 years, since PL 480 has been in effect, total United States farm exports have more than doubled, rising from $3.1 billion in fiscal year 1965 to an estimated $7 billion in 1967.

"What is not adequately recognized is that much of the recent export expansion has been for dollars," Mr. Barlow stresses. "After an increase in concessional export programs in the late 1950's, exports under PL 480 levelled off and since 1960 have averaged about $1.6 billion annually."

In the case of soybeans, and also wheat, rice and feed grains, says Mr. Barlow, the prospects for commercial demand are "about as strong as at any time we remember in the recent past."

Most other United States officials, farm leaders, and industry leaders would agree with that forecast.

SOYBEAN PRICES COMPARED WITH MARKET VALUE OF SOYBEAN OIL AND MEAL IN THE UNITED STATES

The following table is based on the USDA Weekly Grain Market News and for statistical comparison only. It does not reflect actual operating margins since prices are simple averages and do not take into account location differentials or actual purchases and sales of soybeans, soybean oil or soybean meal.

A comparison with the Canadian market is possible to a limited extent, since the prices of soybeans and of soybean meal are closely related to the American prices in view of their duty free import. Canadian soybean oil prices are further influenced by a 20 % import duty protection.

	Unit of Value	July 1967	June 1967	May 1967	July 1966
Soybean Oil:					
Average price at crushing plant	Cents per lb.	9.1	10.1	10.2	12.4
Value from bushel of soybeans (1)	Dollars	0.97	1.08	1.09	1.33
Soybean Meal:					
Bulk price at Decatur	Dollars per ton	78.20	78.10	73.70	97.20
Value from bushel of soybeans (1)	Dollars	1.86	1.85	1.75	2.30
Value of oil and meal from bushel of soybeans	Dollars	2.83	2.93	2.84	3.63
Market price of No. 1 yellow soybeans at Illinois points	Dollars per bu.	2.74	2.82	2.79	3.49
Spread between soybean price and value of oil and meal	Cents	9	11	5	14

(1) Based on assumption that a bushel of soybeans yields 10.7 pounds of oil and 47.5 pounds of meal.

CONVERSION FACTORS

Oilseeds: Statutory Weight per Bushel and Average Volume per Short Ton

	Pounds	Cubic Feet
Flaxseed	56	45.9
Soybeans	60	42.8
Rapeseed	50	51.4
Sunflowerseed	30	85.7
Mustard Seed	–	51.4

Oilseed Products

	Extraction Rate (Percent)	Yield per Bushel (Pounds)	Weight of Gallon (Pounds)
Flaxseed, Crude Oil	35.4	19.8	9.3
Linseed Meal	61,7	34.6	–
Soybeans, Crude Oil	17.7	10.6	9.2
Meal	80.0	47.3	–
Rapeseed, Oil	37.5	18.75	9.1
Meal	57.5	28.75	–
Sunflowerseed, Oil(1)	36.0	10.8	9.2
Meal (1)	38.0	11.4	–
Mustard Seed, Oil	19.0	–	–
Meal	70.0	–	–

(1) Starting in 1966, DBS has been listing sunflowerseed crushings separately. The development of varieties with lower hull and higher oil content has increased the yield of meal and oil. The new conversion factors are for the time being in better agreement with actual results.

Other Products

Marine Oils: 1 Imperial gallon = 9.25 lbs.

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